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ARMY AVIATION BRANCH IMPLEMENTATION

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Honorable John O. Marsh Jr.
Secretary of the Army

Richard K. Tierney
Editor

The mission of the *U.S. Army Aviation Digest (USPS 415-350)* is to provide information of an operational, functional nature concerning safety and aircraft accident prevention, training, maintenance, operations, research and development, aviation medicine and other related data.

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We're not dragging our feet! I recognize that it has been 4 months since HQDA announced that Army Aviation is a branch—and you have seen little information about that momentous decision.

I know all are intensely curious about the details of our branch and how it will affect careers. I appreciate those concerns; to help alleviate them, let me share what I can at this point.

The Aviation Branch Implementation Plan (ABIP) was signed by the Chief of Staff of the Army on 6 June 1983, and forwarded to the heads of the Army Staff for action.

That plan and the TRADOC Review of Army Aviation (TROAA), which was the basis for the plan, addressed many areas; however, although the TROAA and ABIP were sufficiently detailed for the Secretary of the Army and Chief of Staff of the Army to base a decision upon, the specifics necessary for branch implementation required development.

Some of those are:

- Who will be in the branch?
- How will they be selected?
- How and when will they receive branch training?
- What will their branch insignia be?
- How will this affect their careers?

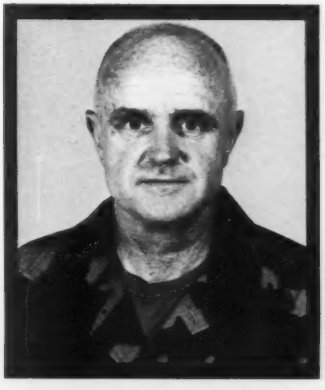
Since the ABIP was finalized, we at Ft. Rucker have been working at full steam to identify, address and resolve those issues. We have established an ABIP Team whose job has been to work on the implementation plan. Those individuals and their counterparts have worked hectic schedules for several weeks and have done a superb job. As examples, we have designed our lieutenants' and captains' courses, developed milestones for their implementation, and made our recommendations to TRADOC on each of the other issues concerning our branch.

At HQDA, the Deputy Chief of Staff for Personnel (DCSPER) has been identified as the responsible agency for carrying out the ABIP; Colonel Ed Lethcoe has been assigned as the Project Coordinator for the Army Staff. He is working at full speed on the issues as are his counterparts within the Pentagon, MILPERCEN, TRADOC, and Ft. Rucker.

Our ABIP Team, along with the Public Affairs Office, has prepared several articles on the information contained in the ABIP and is prepared to release those worldwide as soon as our recommendations are approved.

Some issues have been resolved adequately to discuss; I have written the article beginning on the next page, to which I invite your close attention.

We will continue resolution of the other issues and you will be kept informed of our progress.



Major General Bobby J. Maddox
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ARMY AVIATION BRANCH IMPLEMENTATION

From the Chief of the Army Aviation Branch
Major General Bobby J. Maddox

ARMY AVIATION began its illustrious history on 6 June 1942, when the War Department approved organic aviation for the Field Artillery. Forty-one years later Army Aviation came into its own when, on 13 April 1983, the Secretary of the Army approved Army Aviation as a branch. Subsequently, on 6 June the Army Chief of Staff signed the letter directing the centralization of proponent responsibility for Army Aviation to be at the U.S. Army Aviation Center at Ft. Rucker, AL, and issued the Aviation Branch Implementation Plan (ABIP).

The findings of three recent landmark studies were the catalysts behind this monumental decision. Deficiencies identified in the Army Aviation Mission Area Analysis (AAMAA) and the Army Aviation Systems Program Review (AASPR) led to the decision to conduct a study to examine branch and proponency issues while orienting on how best to prepare to maximize the effectiveness of Army Aviation. The commander, Training and Doctrine Command (TRADOC) directed the TRADOC Review of Army Aviation (TROAA). TROAA reviewed Army Aviation concepts, doctrine, tactics, organization, force design, training, materiel and personnel management as well as central issues of proponent responsibility and establishment of Army Aviation as a branch.

The AAMAA, AASPR and TROAA included the comprehensive involvement of key sectors representative of the Total Army. TROAA alone dealt with several TRADOC schools and centers, various corps, division and support command organizations, the U.S. Army Materiel Development and Readiness Command, Headquarters TRADOC and the Department of the Army (DA). More than 600 personal interviews, 39 of which included general officers, were conducted and 22 major studies on Army Aviation were researched.

Based on the findings and recommendations of TROAA, the Secretary of the Army approved Army Aviation as a basic branch of the Army.

To facilitate the transition process, the Aviation Center formed an Army Aviation Branch Implementation Team. The role of the team is to coordinate, through the U.S. Army Combined Arms Center (USACAC) and TRADOC, with each affected Army agency throughout the transition process to ensure that each action required is accomplished in a timely, efficient manner and has been fully coordinated.

The Aviation Branch Implementation Plan from the Chief of Staff of the Army is the base document for the implementation process. The ABIP addresses all areas of the formation of the branch and is the document from which the major decisions and multitude of actions required are drawn.

Now that Army Aviation has become a branch, each of you has had a myriad of questions about what it means and how it will affect you. Hopefully, the following sections of this article will enlighten you and answer most of those questions.

Personnel Management

The aviation commissioned officer (ACO) must be an expert in Army Aviation doctrine, organization and equipment in order to command, direct and control Army Aviation elements as a full member of the combined arms team. All Army Aviation personnel must be trained and qualified to perform their mission in this dynamic force. The objective of the aviation personnel management plan is to establish procedures for the assimilation of personnel into the Aviation Branch and policies for their management.

The Aviation Personnel Management Plan (APMP) is currently being staffed and is to be completed this September. What follows are the guidelines established by the Chief of Staff of the Army for the preparation of the APMP.

When fully implemented, all Army Aviation personnel, with the exception of Medical Service Corps, will be members of the Army Aviation Branch. This includes ACO Specialty Code (SC) 15 and 71, aviation warrant officer military occupational specialty (MOS) 100 series, as well as MOS 150A air traffic control (ATC) and MOS 160 A aviation maintenance and enlisted career management field (CMF) 67 and MOSs 71P, 93E, 93H and 93J (the air operations portion of CMF 64). Action is being staffed to determine if the enlisted aviation avionics MOSs 26D, E, F and K and 35K, L, M, P, and R should be included in the Aviation Branch.

Beginning in fiscal year (FY) 1984, SC 71 will be a nonaccession specialty. It will be awarded as an additional specialty (ADSPEC) to those selected to enter the Army Aviation logistics career field. Those selected will have completed an initial aviation assignment, captains' training and the Aviation Logistics Officer course (ALOC) taught at the Army Logistics School at Ft. Eustis, VA. Following graduation from the ALOC, officers will undergo a utilization tour and will be managed as SC 15/71 aviators. Consideration is being given to coding these officers as SC 15T. Specifics on exact specialty combinations are still being reviewed. The extent of such changes will be based upon the needs of the Army.

Most ACOs will be accessed directly into the Army Aviation Branch upon entry to active duty. Beginning in FY 1984, it is planned that all commissioned officers who enter the Army in the Army Aviation Branch will receive SC 15. The present goal of 15 percent in-service transfers and 85 percent direct accessions will continue, but precise percentages of in-service transfers authorized in any year will be developed based upon analysis of initial entry volunteers and requests for in-service transfers. Changes in accession percentages affect the availability of ACOs by grade and are being studied to determine the optimum accession mix to support Army Aviation management needs.

Guidelines to be followed in reclassifying commissioned officers are:

- Internal management practices within the Officer Personnel Management Directorate (OPMD) of the Military Personnel Center (MILPERCEN) will be developed to ensure the professional development of the current force of commissioned Army aviators.
- All officers who hold SC 15 or 71 as one of their specialties (e.g., 11/15, 12/15, etc.) or as their only specialty will be transferred to the Army Aviation Branch. Officers holding two accession specialties (e.g., 15/11, etc.) will be given the option of choosing the specialty of their choice. However, individuals choosing a specialty combination that does not allow them to pursue an aviation career will not be eligible for aviation incentive pay.
- Those officers who hold SC 15 or 71 as one of their specialties and who hold a nonaccession specialty will be transferred to the Army Aviation Branch.
- Officers who hold SC 15 or 71 and whose other specialty is a branch related accession specialty will be branch transferred *only if they request* such transfer. However, if they remain in their current branch, their internal management and continued professional development will be determined by the director, OPMD.
- Current force officers who hold SC 15 or 71 may request that their other specialty be removed and that they be reclassified as SC 15/71. Requests will be evaluated on their merits consistent with the Army's need for officers in the specialty to be removed and the current utilization rates for officers in SC 15 and 71.

The Army Aviation warrant officer is a member of the Army Aviation Branch and will wear the same branch insignia as the

Army Aviation commissioned officer. Improved personnel management policy and procedures can be expected as a result of the inclusion of all Army aviators into their new Army Aviation Branch.

Opportunities for females in the Army Aviation Branch will continue in accordance with basic Army policies. There appears to be no direct impact on female accessions or distribution as a result of the formation of the branch. The combat exclusion policy and career opportunity for female aviators will determine the female content of aviation accessions.

As requirements dictate, Army Aviation lieutenants will be selected for additional training to fill Army Aviation intelligence and air traffic control positions. These officers can expect to receive ADSPECs of 25, 27, 35 or 37 as appropriate and will be assigned against positions which require both Army Aviation and intelligence or ATC skills.

Identification of Army Aviation required positions will continue to be governed by AR 611-101, AR 570-1 and other applicable regulations or approved guidance. Positions requiring aviation skills and other specialty skills will be dual coded. SC 71 lieutenant positions will be reviewed for upgrading to captain, reclassification to warrant officer, civilianized or other appropriate action.

As previously mentioned, the enlisted CMF 67 and MOSs 71P, 93E, 93H and 93J (air operations portion of CMF 64) are included in the branch. However, before we examine the affect branch establishment will have on the enlisted fields, we must first discuss the Aviation Logistics School (ALS).

An important part of the branch is the Aviation Logistics School located at Ft. Eustis, VA. The ALS's duties include responsibility for the execution of Army Aviation related logistics, doctrine, training, organization and materiel. The ALS is responsive to the needs of the Aviation Center and the Logistics Center. This means that although the proponent responsibility is centralized at the Aviation Center, the ALS will be responsible for the drafting of all aspects of Army Aviation logistics matters and providing those drafts to the Aviation Center for completion and approval prior to their being forwarded to higher headquarters.

Being a part of the branch will not impact on the accession, sustainment and management of Army Aviation soldiers. The Enlisted Directorate of MILPERCEN is organized to provide life cycle management of the CMFs. Proponency for CMF 67 will remain at Ft. Eustis and for MOSs 71P, 93E, 93H and 93J at the Aviation Center, even though the Aviation Center is the overall proponent for all aviation enlisted personnel matters.

(NOTE: MOS 93E personnel will have their life cycle management coordinated between MILPERCEN and Ft. Sill, OK. This MOS does not currently have Soldier's Manuals, trainer's guides, job books or skill qualification test (SQT) material nor are any scheduled for development due to the small population and pending civilianization of these positions. Training and training development for MOS 93E will continue to be taught at Chanute Technical Training Center, Chanute Air Force Base, IL. Note also that MOS 93E will be civilianized within the next year.)

Soldier training products, to include SQT, for CMF 67 will be developed at Ft. Eustis, VA, by the ALS and approved by the Aviation Center. Soldier training products for MOS 71P, 93H and 93J will continue to be developed by the Aviation Center.

The Aviation Center has overall proponent responsibility for Army Aviation training; however, the ALS will provide training and staff training developments products for CMF 67 in draft to the Aviation Center. This will in no way change the current realignment initiative for CMF 67.

Branch Accouterments

The branch insignia is similar to the previous U.S. Army Air Corps brass; however, the wings on the insignia are the *current* Army Aviation style gold wings with a silver prop. The colors for the Army Aviation Branch will be ultramarine blue and golden orange.

The total life cycle to design, contract,

develop, produce and supply Army Aviation Branch accouterments is about 22 months. Branch insignia should be available in the post exchange in about 12 months and available in the supply system within 22 months. Efforts are underway to further expedite the availability of the insignia, if possible.

Professional Development

There are many important issues facing the Aviation Center during the implementation process; of major concern and priority are the professional development and training of the Army Aviation commissioned officer.

With the advent of the branch, Army Aviation can no longer rely on other branches to provide the necessary lieutenants' and captains' training. Therefore, the Aviation Center has developed programs of instruction to prepare the ACO for leadership in Army Aviation units.

The Lieutenants' Training Course (similar to Officers' Basic Course (OBC)) is currently designed to be an 8-week course attended by SC 15 officers prior to initial entry rotary wing (IERW) training. This course will provide all core subjects as a foundation of Army Aviation related knowledge needed in IERW and during initial Army Aviation assignments. Professional development training will continue throughout IERW to build on the Lieutenants' Training Course.

When viewed as a whole, the combination of lieutenants' training and IERW provides a superb means to train the ACO. Training logically progresses from general military fundamentals to Army Aviation fundamentals to combat flying skills and finally, to application of the fundamentals, tactics and flight skills in a realistic tactical environment. The total experience is not the 14 to 17 weeks of most OBCs, but 8 weeks of intensive lieutenants' training followed by 36 weeks of IERW for a total of 44 weeks of intensive aviation training. The end product will be a highly motivated ACO who has gained a thorough foundation in the requisite technical and tactical skills to become an effective Army Aviation member of the combined arms team.

Captains' training has been designed around a common core course and a set of functional courses of varying lengths. TRADOC and HQDA are finalizing the functional course concept for all branch schools. More information will be provided as decisions are made.

The advantage to captains' and lieutenants' training being taught by the Aviation Center is the individual will be able to receive comprehensive technical and tactical training oriented on Army Aviation topics while still covering all aspects of the combined arms team. The ACO will receive Army Avition instruction from the home of Army Aviation, rather than as a secondary block of instruction at another combat arms school.

The results of this change will greatly benefit the Army by providing a better trained, better educated and more highly motivated leader to employ the most flexible, responsive and effective combat multiplier on the battlefield today.

New and Advanced Equipment

One of the doors opened by the establishment of the branch is the more centralized supervision and management of the procurement and development of new and advanced equipment. The scope of the new equipment being developed is as dynamic as the sophisticated technology upon which it is based.

Five major aspects or areas where Army Aviation will benefit from branch status are:

- new equipment training plans
- aircraft survivability equipment (ASE)
- special electronic mission aircraft (SEMA)
- aviation life support equipment (ALSE)
- air traffic control equipment.

Training plans for new equipment are vital documents. These plans serve as a guide and are formulated in conjunction with the equipment developer/manufacturer. These

training plans are actually tested, revised and validated along with the equipment development.

New equipment training development (NETD) agencies participate in developing the basic plan and, as the cycle continues, the training plan is revised and reinforced to include any change or modification of equipment.

A valid training plan identifies to the training community (TRADOC) the amount of training time, equipment, facilities, personnel and resources (funds) required. Also included are the doctrine and tactical training with which the equipment can be most effectively employed against the expected threat.

The equipment procurement cycle may vary from a few months to several years, but in any case the training plan milestone dates must be closely coordinated with equipment milestones to ensure adequate training time prior to fielding. Since many changes are necessary, NETD constantly updates the training plans and alerts the Army Aviation community of any impact or slippages which may result.

The NETD effort in developing, revising, updating and maintaining the training plan is an invaluable investment. Any equipment, new or old, is only as effective as the user's ability or skills. The training plan is definitely an important vehicle to be used in developing skills in a timely and effective manner.

The training for new equipment has always been a requirement and much effort has been spent meeting the challenge. Now that Army Aviation is a branch, the opportunity to centralize the control and administration of programs will improve and expedite the efforts of all interfacing agencies that are involved in fielding equipment. Now the "gray" areas as to "who-is-to-do-what-and-when" are eliminated since the responsibility and direction is concentrated at the Aviation Center the home of the branch, where decisions can be made and carried out effectively.

ASE consists of both passive and active countermeasures. The passive include infrared (IR) paint, heat suppressors and radar warning receivers. Active countermeasures consist of devices such as radar and IR jammers and decoys. (Chaff is a radar decoy. The IR flare is a heat seeking missile decoy.)

In the past, the doctrinal and tactical training for the various aircraft, with their associated ASE, has been allocated to the particular aircraft proponent. For example, proponency for utility aircraft was Ft. Benning, GA; attack and scout were Ft. Knox, KY; cargo was Ft. Eustis, and SEMA was Ft. Huachuca, AZ. A tasking from the Aviation Center had to go through TRADOC then out to the appropriate command.

Army Aviation, as a branch, puts all the ASE responsibility under one umbrella. Paperwork flow will be greatly reduced and the command structure will enable the combat and training developers to work directly with tactics and doctrine developers. Time and effort will be saved, thus more effective training will take place.

The SEMA mission of Army Aviation is critical to the success of any conflict in which the United States may become involved. SEMA has become a major force multiplier in today's Army and has evolved from one specialty aircraft, the OV-1 Mohawk, to a total of five different aircraft.

The emphasis and support which SEMA demands can now come from a central source which will shoulder the responsibility and have the authority with which to act. The highly technical equipment, thorough training requirements and effective mission completion are all very important aspects of SEMA and require interface and close coordination among several agencies. This is especially true between the U.S. Army Intelligence Center and School (USAICS) and the Aviation Center, since the Aviation Center provides the Army aviator a basic aircraft qualification; USAICS provides SEMA mission specific training.

ALSE is another very important area to the Army Aviation community. Years ago ALSE was limited to a few items. Now, the list goes on and on to include several hundred items. This is necessary to protect our personnel who must operate in all types of environments and with a variety of equipment. The magnitude of ALSE is such that the training of personnel in its proper use and care is a mission in itself.

The ability to train and equip our personnel will continue to improve; Army Aviation becoming a branch will definitely enhance the effort. Response time, guidance and support are only a few areas where branch status will pay off.

Doctrine and Training Literature

The decision to establish Army Aviation as a branch and to centralize proponent responsibilities will have a far-reaching effect on doctrinal and training literature. As a result of this decision, about 34 literature products (field manuals and training circulars) will be transferred from other TRADOC schools to the Aviation Center which is working closely with these proponent agencies to effect a smooth and timely transition. A recently developed milestone schedule calls for all literature products to be transferred to the Aviation Center not later than the end of FY 1984. This will ensure that users in the field will experience no unnecessary delays in receiving publications that are vital to Army Aviation.

In order to better understand how the transfer of these manuals will occur, let's take a closer look at what is known as the literature *developmental process.*

The decision to write a book is based on the answers to:

- Is it needed?
- What is its purpose?
- Who will be the primary readers?
- What is the scope?

Once these answers have been decided upon, the writer will be assigned a topic. A subject topic outline, which provides an overall view of the proposed publication, is written with the assistance of local subject matter experts. This outline forms the foundation for a preliminary draft which is developed and then staffed within the preparing agency. After comments from the preparing agency have been evaluated and incorporated as required, a coordinating draft is developed, printed and circulated Armywide. Feedback as a result of the field's review enables the writer to prepare a final approved draft. Plans have begun and we anticipate the transfer of several manuals in this final draft stage to the Aviation Center from the current proponent schools.

Production is the next stage. This begins when the visual information specialist assembles the written material with spacing and illustrations. This evolves into a finished product known as a camera-ready mechanical (CRM), which is the final product that is sent to the printer. Since CRMs are large and bulky, a smaller, more manageable reproduction called a comprehensive dummy is made. As currently envisioned, the Aviation Center will receive as many as nine manuals in the camera-ready mechanical stage from other schools. The comprehensive dummies will be forwarded to the Aviation Center for review and approval prior to the school forwarding the CRMs to the Army Training Support Center (ATSC) for contract printing. When these manuals are scheduled for revision, the Aviation Center will start the revision process and develop and design the manual in its entirety.

Since all TRADOC schools are required to predict 5 years in advance what manuals they plan to write and produce, many manuals will be transferred in name and number only.

Upon transfer of proponent responsibility, the Aviation Center will closely study the feasibility of writing the proposed manual. This study will be done in conjunction with the former proponent agency to ensure such areas as the need, purpose and scope of the manual are defined. Once a decision is made to write the new manual, it will be placed on a developmental and production priority list with other literature products.

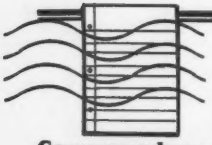
In conjunction with implementing this transition plan, another plan on a much larger scale has begun to take effect. This is the expansion of the Doctrine Literature Program (DLP) to include all training literature products except soldier training publications, military qualification standards manuals, Army Training and Evaluation Programs (ARTEPs), and Reserve Officers' Training Corps (ROTC) manuals. As a result of recent guidance from TRADOC, the definition of doctrine has been expanded in scope to include tactics, techniques and procedures. By consolidating the Armywide Training Literature Program with the DLP, and then scrubbing the unnecessary "nice-to-have" manuals from the system, the important "need-to-know" doctrinal manuals will get to the field much faster.

The consolidation of the ATLP and DLP will impact favorably on our new branch. The TRADOC Review of Army Aviation Study determined that a void existed in Army Aviation doctrine. As a result, 12 new doctrinal manuals have been identified as being required to "shore up" this void. The Aviation Center has begun to write three of these manuals; first priority has gone to

writing the Keystone Army Aviation Manual: "Integration of Army Aviation in the AirLand Battle." Under the revised DLP, these new manuals will be written, produced and distributed to the field by the Aviation Center. With no requirement for TRADOC or USACAC appproval before a manual is written, direct coordination among proponent schools will be required to ensure continuous interface.

Reserve Components

Reserve Component (RC) Army Aviation personnel (Army Reserve and Army National Guard) now are managed by an Army Aviation Branch within their respective organizations; thus there will be no direct impact on their current management by the establishment of Army Aviation as a branch. Accessions to the RC program come primarily from three sources: direct accession (ROTC, Officer Candidate School, etc.), civilian acquired skills program (i.e., civilian pilots) and prior active service personnel. The majority of Army aviator accessions into the RC have been and will continue to be trained, prior service personnel. Army Aviation qualification, refresher and transition training provided to RC personnel in TRADOC and in RC-operated facilities will remain unaffected.



Correspondence Courses

The Army Aviation maintenance correspondence courses currently originate at the Transportation Center at Ft. Eustis. We plan to leave these courses at Ft. Eustis to be done by the newly created Aviation Logistics School.

With the proponent responsibility being centralized at the Aviation Center, ALS will be developing the correspondence course programs and watching CMF 67 actions while obtaining approval from the Aviation Center. Likewise, the ALS will be responsible for developing programs of instruction and training extension courses with approval by the Aviation Center. These courses will most likely keep the subcourse numeral designators they currently have.

The Aeroscout Correspondence Course written by Ft. Knox is planned for transfer to the Aviation Center during FY 1984. This course consists of 10 lessons and is non-MOS producing. After transfer to the Aviation Center, these courses will be designated by Army Aviation subcourse numbers.

The air traffic control correspondence courses will continue to be done by the Aviation Center.

An Aviation Lieutenants' Training Course in correspondence for RC personnel plus U.S. Army Reserve (USAR) school versions will be developed. An Army Aviation Captains' Course will be treated similarly and be fielded concurrently with the resident curriculum.

The lieutenants' course will consist of about 55 subcourses (212 credit hours); 28 subcourses (82 credit hours) will be previously developed branch-immaterial subjects. The remaining 27 subcourses (130 credit hours) will be branch material and developed by the Aviation Center.

The captains' course will have six phases: Phases I, III and V will contain existing instruction common to all commissioned officers; Phases II, IV and VI will contain branch related instruction and must be developed for both the correspondence and USAR school resident phases.

The course will contain about 68 subcourses (300 credit hours); 44 subcourses (146 credit hours) will be previously developed common subjects. The remaining 24 subcourses (160 credit hours) will be branch related and developed by the Aviation Center.

The USAR school version will consist of the common subject blocks of instruction currently used by the USAR schools and Army Aviation Branch related instruction (Phases II, IV and VI) of about 76 academic

hours each, which will be developed by the Aviation Center.

Implementation of this course will be as follows:

- Training Year 1984—Phase I
- Training Year 1985—Phases II, IV, VI.

Each phase will be 2 weeks in length and be limited to 50 students. During the implementation of this program, those Army Aviation officers who are enrolled in a branch course other than Army Aviation will continue in that course.

The development of these options provides the RC officer with the means to attend Army Aviation lieutenants' and captains' training in residence, correspondence or a combination of both.

Army Training and Evaluation Program for Army Aviation

As you know, the Army Training and Evaluation Program prescribes unit mission and those collective tasks which the unit must do to win the battle. Tailored for a specific unit, an ARTEP describes the task, the combat conditions under which the task must be performed and an accpetable standard of performance that must be achieved. Additionally, an ARTEP outlines the training support requirements, such as devices or items of equipment, which will assist the unit in accomplishing performance oriented training. Used as a combination training and evaluation tool, it aids in establishing training objectives, determining training status or proficiency and managing resources.

School commandants select and prioritize for which units an ARTEP will be developed. Generally, this is done based on the density of a type table of organization and equipment (TOE) unit within the force structure. Once selected, a unit's TOE capability, its mission, and the most current tactical and applicable threat doctrine available are all analyzed to detemrine the critical missions and collective tasks required to be performed by the unit.

The implementation of our branch will bring together, under one proponent, the knowledge and expertise to design and write a broad range of TOEs plus current and proposed Army Aviation doctrine. This same knowledge and expertise will be used in the development of a cohesive set of Army Aviation ARTEPs. Army Aviation units will have one source for resolutions of their questions or problems concerning ARTEPs. Consistent standards can be applied throughout Army Aviation units to better cope with the challenges of the future.

The transfer of Army Aviation related ARTEPs will be done under two conditions. First, if the ARTEP identified for transfer is under development, it will be transferred on completion of the camera-ready stage prior to submission to the Army Training Support Center. The Aviation Center will approve the documents and ensure that each ARTEP is complete and properly assembled prior to submission to ATSC. Second, if the ARTEP is completed and currently in the field, it will be transferred and programmed for revision by the Aviation Center in accordance with TRADOC regulations.

Conclusion

It is evident from all the information above, that a tremendous amount of time, thought and dedication have gone into making our branch a reality. During the past 41 years, Army Aviation has grown from an L-4 "artillery spotter" to the most flexible, responsive and capable member of the combined arms team on the battlefield today; the future holds even brighter opportunities for the Army Aviation Branch.

Unnerving Noises in the Night

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Captain Don Howard Wolf
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Jacksonville State University, FL

The operations of the Air Assault Company Team, a unique 101st Airborne Division (Air Assault) concept that is only a few years old and is not in a Department of the Army distributed field manual are described here. The authors share with us the techniques developed by the team to strike the enemy when and where he least expects it—at night in his rear areas.

THE DOZING GUARD hears a far-off faint hum which strikes fear in his undisciplined heart. His weary eyes glance first at his watch, 0230 hours, and then back to the blackened sky. He strains to see any telltale light images. None exist, only the dispersing noise of helicopters. But from where? And how many? And to what destination? "I hope they're ours," he mutters as he nods back off into his normal guard posture. He is one of the two perimeter guards who is assigned on the opposing forces' battalion field trains.

What he has observed—or more precisely *not observed*—is an air assault company team which has just landed to his rear with the mission of destroying the battalion field trains which he is charged to protect. It is doubtful that he will ever make the crucial connection as his nodding head becomes detached from his sleeping body. He should have informed his superiors, even though he would have nothing to report except that he hears something, maybe helicopters. He has no numbers, no direction, no visual collaboration, no indication of mission, nothing. Nothing but a slightly distorted noise. He would have succeeded in making his superiors nervous, maybe.

The air assault company team possesses the swift, devastating mobility which enables it to bring maximum combat power to a decisive location at the most inopportune time for the enemy. Air assault operations are traditionally characterized by speed, mobility, flexibility, stealth, shock and firepower.

Air Assault Company Team

Offensive operations are preferable for the company team to maximize these advantages. Flexibility allows this team to adapt to various offensive missions: raids, ambushes, counterattacks and occupation of blocking positions. The ability to *strike deep* across the forward line of own troops clearly enables the destruction and disruption of enemy main supply routes, communication lines, command centers and logistical bases.

The company team is best used at night, flying nap-of-the-earth under black-out conditions while using night vision goggles. The advantages of operating at night and at low level include capabilities never seen before by unit commanders. Obstacles may be bypassed with relative ease, initial success may be capitalized on by rapidly concentrating firepower and combat units, and a new direction of attack may be used which was never before fully exploited. Under these specific conditions, experienced, qualified pilots can insert a company team of five UH-60 Black Hawks into a landing zone (LZ) almost as if invisible.

The dozing guard failed to realize the actual composition of the company team. Had he seen the force he would have frozen in fear of its firepower and speed. An air cavalry scout team recons the route (ahead of the company team of five lift aircraft) with two OH-58 Kiowas and two AH-1S Cobras. The Cobras may be armed with tube-launched, optically-tracked, wire-guided (TOW) missiles, 2.75 inch rockets, 20 millimeter cannon or any combination of the three. The scout team leader makes recommendations for ammunition loads and aircraft mix (balanced, light or heavy recon teams) based on the mission, enemy situation and aircraft availability. If an enemy target is spotted, the scout team reports back to the main body and a decision is made concerning engagement.

The lift helicopters are escorted by two to four attack aircraft—AH-1S Cobras with an equal number of OH-58 Kiowas that provide en route, flank and rear security. Should the LZ turn "hot" the escort attack helicopters and the scout team can provide supporting fires for a hot LZ landing or engage targets while the lift aircraft proceed to a predetermined alternate LZ. It is imperative that the ground commander have communications with all aircraft to ensure timely intelligence updates and to assist him in directing the attack teams to targets.

The ground forces which the five UH-60 Black Hawks bring in depend on the mission and the force tailoring that has occurred. The task organization may include attachment of engineers, artillery, air defense atillery, mortars or TOWs. Equipment of the attached elements may be internally loaded or slingloaded with their organic vehicles. Obviously, any external loads will slow down the Black Hawks and increase their visual size. Flexibility demands that there be no firm organization to the company team. This flexibility extends

to aircraft number, aircraft type and size and composition of the ground forces. This factor offers commanders a myriad of possibilities to choose from based on the mission and desired results.

Planning for the company team air assault is detailed and complicated. Ground commanders must know the capabilities of the aircraft and their limitations. Aviators must understand the overall mission and the desired results as well as the capabilities of the ground units. The pilots also advise ground commanders of aviation tactics and techniques. The ground commanders, however, have overall responsibility for the entire mission. To assist them in the planning, preparation and control of the company team air assault, are the Combat Aviation Team (CAT) and the Combat Aviation Party (CAP).

The CAT soldiers are qualified pathfinders attached to the rifle company which assists ground unit commanders with pick-up zone and LZ operations and control of aviation assets.

The CAP is a combat arms qualified aviator who is attached to the infantry battalion headquarters. His mission is to assist the battalion commander in control of aviation assets and provide liaison between the ground unit and the aviation unit. All of these individuals together with the battalion S3 and fire support officer conduct an air-mission briefing (AMB) during the planning phase.

During the AMB all parties involved in the mission discuss the concept of the operation, support requirements, fire support, alternate and emergency procedures and abort criteria. The aviators then make recommendations to the unit commander on specific flight routes, ammunition loads of the aircraft, exchange call signs and frequencies and point out potential problems unique to the aircraft being used.

As with all tactics, there are disadvantages to the company team air assault. Communications from the ground unit to its higher headquarters may be difficult over extended distances. The loss of one helicopter to enemy fire or mechanical problems will have an adverse impact on the ground unit's ability to accomplish the mission. Weather may completely abort the mission. Resupply of the ground unit becomes critical if the mission is one of extended operations. Since the air assault infantryman must travel with all supplies, ammunition, food and water on his back, he must be resupplied more frequently than mechanized troops.

The air assault company team provides the commander with a cohesive, flexible, mobile fighting force never seen before on the battlefield. Offensive actions should ultimately strike the enemy when and where he least expects it. His rear areas where he feels safe and secure, where he fuels and feeds his war machine and his command and control centers with all their generators and radios are very accessible targets for the air assault company team. Not only will his forces grind to a halt due to logistical shortages, but his troops will learn to spend sleepless nights, with straining eyes and ears, futilely attempting to determine the next target location—before it's too late.

Go back to sleep, comrade. AIR ASSAULT!

Black Hawks arriving at an LZ during an air assault company team exercise. photographs by Captain Don Wolf

Soldiers of the 3d Battalion, 187th Infantry, run to board a Black Hawk for an air assault operation.

REPORTING FINAL

Late News From Army Aviation Activities

FROM FORT RUCKER

FM 1-302 (ALSE). The Aviation Center has announced that FM 1-302, "Aviation Life Support Equipment (ALSE) for Army Aircrews" is scheduled to be released to the field this quarter and will supersede TC 1-62, "Aviation Life Support Equipment." This manual will provide the aircrewmember with an overview of aviation life support equipment to assure proper use and care during normal operations and in combat or survival situations. The manual is divided into 11 chapters and 1 appendix. It covers the aviation life support subsystems; survival vests; sound protective flight helmets; flight clothing; oxygen masks, NBC protective equipment; flotation equipment; first aid kits; aircraft survival kits; operation and use of survival kit components; and developmental ALSE. A companion manual, FM 55-408, "Maintaining Aviation Life Support Equipment" is under preparation at the U.S. Army Transportation School and it will cover maintenance and inspection of ALSE.

(Mr. Earl T. Brown, DTD)

Change to NCO Advanced Course (ANCOC-skill level 4). The Sergeants Major Academy is developing a new "common core" program of instruction for the ANCOC to standardize skill level 4 for NCOs throughout the Army. The new common core, which will replace the common part of the present ANCOC, should be ready for implementation during 1984. The additional track of about 2 weeks for military occupational specialty peculiar training will be continued. The new ANCOC should remain 9 weeks in length and be conducted quarterly at the Aviation Center. **(Roland Weldon, DTD)**

Methane Fuel. The rising cost of natural resources, a result of the lack of many of these raw elements, has caused many military and civilian branches to seek substitutes for these materials without sacrificing quality products.

The U.S. Army Aviation Development Test Activity is testing liquid methane as an alternate to the aviation gasoline currently used in the TH-55A Osage training helicopter.

Methane, a component of natural gas, is a colorless, odorless gas in its natural state. Aviation gasoline, on the other hand, is a petroleum product. The methane gas is stored as a liquid at minus 260 degrees Fahrenheit.

Ronald P. Steele, aerospace program engineer, explained the two major economical benefits of using the liquid methane. "The cost of the methane fuel is less than one-third that of the aviation gasoline. Aircraft maintenance costs have also been predicted to be lower because the methane fuel is a cleaner burning fuel and

Making repairs. SSG Mark A. Starcher, foreground, shows SFC Calvin W. Taylor how to make adjustments on the tape recorder at Lowe Army Airfield, Ft. Rucker, AL. SSG Starcher is the 7th Signal Command ATC Maintenance Technician of the Year for 1982, while SFC Taylor is the command's Air Traffic Controller of the Year. Both are members of Ft. Rucker's Headquarters Support Company, Army Communications Command Signal Battalion.

photo by NoelKenya Atkins

shouldn't wear the internal engine components as fast as the aviation gasoline."

According to Mr. Steele, the only structural modification necessary for the methane fuel system involves the mounting of the fuel tank. He elaborated, "The standard fuel system will be removed and replaced with the methane fuel system. The new system will contain a heat exchanger which will warm the liquid methane and return it to its gaseous state. The standard fuel injection system will be replaced with a gas mixer."

(Carlyene Prince, AADTA PAO)

New Division Established. As part of the Army Aviation Branch reorganization, the Tactics and Doctrine Division (TDD) under the command of LTC (P) Tommy C. Stiner, has been established to resolve the numerous tactical and doctrinal aviation issues. The missions of TDD are to:

- Write the Army Aviation capstone manual and field it by 30 March 1984.
- Write the follow-on aviation manuals.
- Correct doctrinal deficiencies and voids.
- Solve how-to-fight issues.
- Standardize division and brigade aviation staff procedures.
- Manage the consolidated doctrine and training literature program.
- Review other proponent manuals for doctrinal sufficiency.

The primary concern of TDD is to inform the aviation community of our existence and to solicit from the real experts a continuing exchange of reports, experiences and considerations for employment of Army Aviation. Either write or call and give us your thoughts on current and emerging tactical and doctrinal issues. (Headquarters, U.S. Army Aviation Center, ATTN: ATZQ-T-TD, Ft. Rucker, AL 36362, AUTOVON: 558-4328/4750/5397.)

Special Honor. Chief Warrant Officer, CW4, Michael J. Novosel was presented a very special stamp album Thursday (7 July) by Enterprise, AL, Postmaster M. Heath Murphy. The album contained a 40-stamp sheet of Medal of Honor stamps commemorating the 120th anniversary of the awarding of the Medal of Honor.

The postmaster general of the U.S. Postal Service, William F. Bolger, asked that all recipients of this nation's highest award be honored with individual presentations of the new stamp which was issued 7 June 1983, at the Pentagon.

CW4 Novosel, who is senior battalion training, advising and counseling officer in 6th Battalion, 1st Aviation Brigade at Ft. Rucker, is a veteran of more than 40 years' military service. He has served in the Army Air Corps, the Air Force and the Army, and saw combat action in World War II, the Korean War and the Vietnam War.

During his second tour in Vietnam, from March 1969 to March 1970, his bravery and flying skills in combat earned him the Medal of Honor. On 2 October 1969, while serving as commander of a medical evacuation helicopter from the 82d Medical Detachment, 45th Medical Company, 68th Medical Group, CW4 Novosel braved intense enemy fire to evacuate and save the lives of 29 soldiers, even though his helicopter was hit and damaged and he was, himself, wounded.

(Al Endicott, USAAVNC PAO)

ATC Awards. SFC Calvin W. Taylor and SSG Mark A. Starcher, members of Headquarters Support Company, Army Communications Command Signal Battalion-Ft. Rucker, were recently selected for professional honors by the 7th Signal Command , Ft. Ritchie, MD. SFC Taylor was selected as the command's 1982 Air Traffic Controller (ATC) of the Year, and SSG Starcher was chosen ATC Maintenance Technician of the Year.

SFC Taylor began his ATC career in 1968 by attending the 18-week ATC school, then held at Keesler Air Force Base, Biloxi, MS. During his 15 years in the Army, he has served as a control tower operator at numerous posts, both in the United States and abroad. He is presently the Federal Aviation Administration control tower examiner in the battalion's Quality Assurance Branch.

SSG Starcher, an 11-year veteran, is now the battalion's quality assurance inspector for all 21 control tower sites and 4 radar sites which comprise the Ft. Rucker complex.

The 7th Signal Command consists of about 40 ATC facilities, both fixed and tactical, within the 50 states and the Panama Canal Zone, to include the Ft. Rucker complex. Each facility submitted nominations from which these Ft. Rucker soldiers were judged "Above the Best."

(AL Endicott, USAAVNC PAO)

FROM FORT HOOD

Dustoff Award. The unit which provides emergency air medical evacuation for Ft. Hood and central Texas was cited 30 June for its outstanding contribution to air safety and accident prevention. The 3d Flight Platoon, 507th Medical Co (Air Ambulance), part of the 13th Support Command's 1st Medical Group, received a Department of the Army Aviation Accident Prevention Award of Merit. The award is made to units which have experienced a year of accident-free flight.

For the 3/507th, it was the tenth consecutive year they qualified for the award. "Those 10 years represent the completion of more than 16,000 accident-free flying hours, including 4,800 military medical evacuation missions and 890 civilian MAST missions," said MAJ Daniel W. Gower, the unit's commander.

The awards were presented by COL Carl W. Tipton, the 13th SUPCOM commander, who praised their work, their professionalism and their contribution to the Ft. Hood and central Texas communities. **(MAJ John E. Grabowski, 13th SUPCOM PAO)**

FROM FORT RITCHIE

68th ATC Record. Thanks to the pilots of III Corps' 14th Aviation Battalion, 2d Armored Division's 502d Aviation Battalion and 7th Signal Command's 16th Air Traffic Control Battalion's own aviation section, the 5th Platoon, 68th Air Traffic Control Company (Forward) handled 163 ground controlled radar precision approaches on command post exercise Golden Saber VIII.

"That's a record and that's training," stated SSG Edwin Dunham, who is the 5/68th's tactical ground controlled approach radar section leader.

The 5/68th, by the way, was selected as 7th Signal Command's Combat Support Platoon of the Year for its outstanding performance in direct support of III Corps during 1982.

FROM WASHINGTON

Last Army Controllers Depart. On 30 June the last seven U.S. Army air traffic controllers departed from their temporary duty stations at civilian airports in the nation's capital, Reno, NV, and Burbank, CA. These last seven serve as worthy representatives of the more than 250 who preceded them to civilian airports at 40 locations in 31 cities around America.

Almost 23 months ago, more than 250 Army air traffic controllers were called to assist the Federal Aviation Administration in controlling air traffic at civilian airports as a result of the strike by members of the former Professional Air Traffic Controller's Organization.

FROM NEW YORK

Unit Redesignated. On 24 February 1983, the 1st Battalion 26th Infantry (Blue Spaders) was redesignated as the 4th Battalion 16th Infantry (Rangers), 1st Infantry Division. This battalion is now seeking items of historical interest for display in the battalion museum. Request that former 16th Infantry "Rangers," and their friends, who are interested in donating service-related memorabilia (photographs, awards, books, letters) highlighting the regiment's long and distinguished history (Civil War through Vietnam) contact: Headquarters, ATTN: CPT Shavers 4th Battalion 16th Infantry, APO New York 09137.

FROM ALASKA

Hutton Safety Award. Outstanding performance and a near perfect safety record have earned the members of the 120th Aviation Company, Ft. Richardson, the Army's Brigadier General Carl I. Hutton Memorial Award for Safety. The award was presented by BG Nathan Vail to MAJ Richard Carrol, commander of the 120th.

The unit was chosen for this award by the Department of the Army National and International Aviation Board from among 35 other nominees worldwide. Among the unit's achievements, the 120th logged 3,222 flying hours from 1 October 1981 through 30 September 1982. During this period, they experienced no accidents, either major or minor, though flying all year under the rugged conditions in Alaska. They also maintained a continuous around-the-clock medevac alert aircraft and crew, for search and rescue and medevac missions from the Rescue Control Center at Elmendorf Air Force Base.

The award is given annually to the Army unit who has best demonstrated outstanding professionalism and has contributed to the advancement of flight safety in Army Aviation.

Yield, Bird, Yield

ROAD SIGNS ON THE outskirts of Nairobi, Kenya, read "Elephant Have Right-of-Way," and after all who in their right mind would argue right-of-way with a 6-ton elephant?

Elephants don't fly of course (except maybe at Disneyworld) but ask any pilot whose windshield has just been shattered by a 15-pound turkey buzzard—most of which is splattered all over his helmet visor— and he can tell you it felt like he hit an elephant.

When one large bird tried to overfly a Navy helicopter, it was sucked into the rotor system impacting on the leading edge of the main rotor. The bird was thrown down into the copilot's greenhouse window with such force that the pilot described it as sounding "as though a cannon had just been fired in the cockpit." The bird had broken through the window and still hit the copilot's left shoulder with such stunning force that he could not move his hand to release the altimeter's hold on the collective. He couldn't even communicate with the other pilot because the bird which hit him had also caught and disconnected his communications cord. The aircraft was in a noselow attitude when he managed to release the ASE on the cyclic stick. The other pilot, who had realized by this time that something was wrong, reacted with a positive power increase and a successful waveoff. The aircraft was recovered successfully.

Birds, mechanical and feathered, claim the same air space; when they try to occupy it simultaneously something has to yield. When a bird strikes an aircraft the bird loses, but birds take their toll in broken windshields, smashed radomes, dents in wings and fuel tanks and engine damage. The damage inflicted by a birdstrike is in proportion to the weight of the bird and the speed of the aircraft; each time the aircraft's speed doubles, the force quadruples. Impact forces on high speed aircraft can be as much as 200,000 foot pounds. In a 2-year study period, the U.S. Air Force experienced 3,250 bird strikes at a cost of $5 3/4 million.

Between October of 1979 and mid-1983, 141 bird strikes on Army aircraft were reported. Six of these strikes resulted in damages ranging from $4 to $6 thousand. Total damage costs were more than $62 thousand. Increasing emphasis on low level, tactical, nap-of-the-earth operations will make strikes more likely since most bird strikes occur in the first 500 feet of altitude.

Migration routes

Bird strikes are most likely to occur in migratory airways (particularly during the fall when the bird population is larger) and over waterways, lakes and marshes with heavy concentrations of waterfowl (figures 1, 2 and 3).

There are four major migration routes in North America. The Pacific route extends from Alaska down the coast into Mexico. The Central route follows the line of the Rocky Mountains. The Mississippi migratory route is along the Great Lakes and Mississippi River valley to the Gulf of Mexico and the Atlantic is from Northeastern Canada to Florida, Cuba and South America.

Most birds migrate at night, feeding and resting during the day. Flights through such areas are best scheduled at midday.

Bird refuges and sanctuaries

The federal government provides at least 250 refuges, comprising 12 million acres, most of which are for waterfowl. An additional 30 million acres are set aside by states as bird sanctuaries (figure 4). Nesting areas and refuges should be avoided, especially at dawn and dusk when birds are more active.

Aviators have noted increased bird activity around newly planted farmlands and during grain harvest season. The presence of birds of prey and carrion eaters is largely unpredictable, except over areas such as refuse dumps. Strikes of such birds are particularly damaging to aircraft because of their large size. Crews have

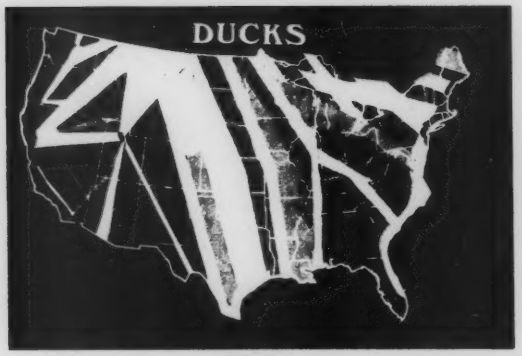


Figure 1

Figure 2

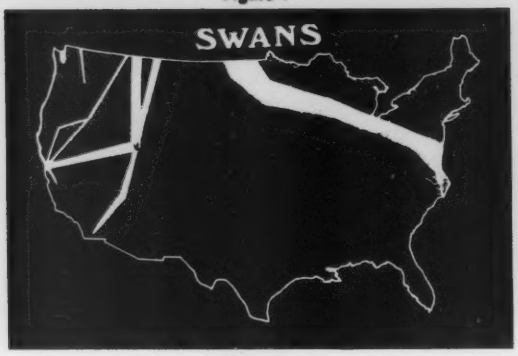


Figure 3

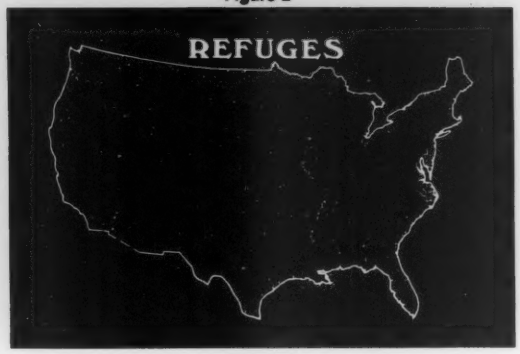


Figure 4

related encounters with birds whose wingspan equalled the width of the aircraft.

Aircraft crews report that birds sometimes make extraordinary efforts to avoid aircraft—they will try to dive, overfly, or dodge. But an occasional bird seems bent on protecting his airspace. The pilots of a UH-1H were performing contour flight at 90 KTS, 50 feet agl. They crossed a saddleback ridge and encountered orbiting vultures. Two of the birds immediately in front of the aircraft turned and flew past, but one vulture, approximately 500 feet above, folded his wings and dove straight at the helicopter. The surprised IP made a left turn, attempting to avoid the strike. The aircraft shuddered but the crew thought they'd missed the bird until post flight inspection revealed a damaged vertical fin. Score—vulture 1, helicopter 0.

Protect yourself.

There is no way to ensure your aircraft won't be involved in a bird strike. Accident reports emphasize the importance of aviators protecting themselves if a bird comes through the windshield or windows of their aircraft. The pilot of one CH-47B operating in the Panama Canal Zone was turning on the crosswind leg of the traffic pattern and still climbing. A large buzzard struck his windshield, shattering it. The pilot was struck with flying splinters of glass but he was uninjured because *his helmet visor was down.*

The copilot of an OH-58C was flying 100 feet agl between 60 and 70 KTS up the side of a hill. The bird, which approached from his lower left, struck the windshield penetrating it and striking him in the face. *His visor, which was worn in the down position,* protected him from impact of the bird and Plexiglas fragments.

Birds usually lose the right-of-way contest, but not always. A helicopter operating in an area of the Canal Zone with a large population of seabirds and vultures successfully missed four birds in its flight pattern but its main rotor struck a large seagull. The aircraft made a precautionary landing. The Air Force's Bird/Aircraft Strike Hazard (BASH) team was asked to survey the area for possible avoidance procedures. The only procedures that the BASH team thought would be effective in this

area was—*Don't fly in the area.*

Birds find some uncanny ways to even the score with aircraft. Some are ingested into engines where they can do extensive damage. One bird so ingested eluded inspectors. Later, the dried remains were dislodged and went further into the engine damaging a compressor blade.

Some birds find aircraft an ideal place to set up housekeeping—especially in aircraft down for maintenance for a long period of time. They build nests in engines, cowls, wheel wells, flight controls, air inlets and exhaust ducts. A pilot who had felt binding in the pedals of his aircraft landed for inspection and found trash from a bird's nest had become lodged in the silent chain. One aviation unit reported that nests removed from aircraft in the morning were sometimes rebuilt by 2 p.m. All inlets on aircraft down for maintenance should be plugged and inspectors should keep in mind that their feathered friends may have decided to stake out a homestead claim on an AH-1G.

There is no final answer to the problem of bird strikes. Use of strobe lights and aircraft landing lights has helped and rotating beacons and wounded bird sound tapes have had some success in scaring birds away from airfields and hangars. There is also a product registered with the U.S. Department of Agriculture which helps control gulls around airports by killing a small number of birds. Other birds hearing the distress calls are frightened away. Experiments with a falcon-shaped model aircraft caused some birds to move away from the model's area but flocks of birds have also been known to attack model airplanes.

Awareness

The fact that bird strikes do happen and when and where they most often occur are factors to consider in planning flights. Awareness of the additional hazard of bird strikes becomes more important as the fall migration season approaches.

- Migration peaks during September and October and again in March and April.
- Birds are more active in the mornings and evenings than at midday.
- Operations within 30 miles of bird refuges are considered hazardous.
- Most bird strikes occur during low level flight operations.
- Newly planted farmlands, refuse dumps and other feeding sites attract large numbers of birds.
- Windshield and greenhouse penetrations are the greatest potential danger to aircrews from bird strikes. Helmet visors, worn in the down position, have prevented possible blinding of pilots from glass and bird fragments.

Bird Avoidance Model (BAM)

In an effort to reduce bird strikes, the U.S. Air Force Bird/Aircraft Strike Hazard team has developed a predictive Bird Avoidance Model (BAM). The purpose of the model is to estimate bird strike risk on low level routes given date and time of flight, low level route number and type of aircraft. The BAM considers both changes in aircraft mission profiles and bird populations within a particular geographic region and it is versatile enough to accommodate various aircraft types, schedules, and missions. In addition, the BAM considers the timing of bird movements as well as the intensity of migration taking into account differences in bird behavior and variations in the regional availability of habitat.

The computer-generated bird risk analysis is operational and

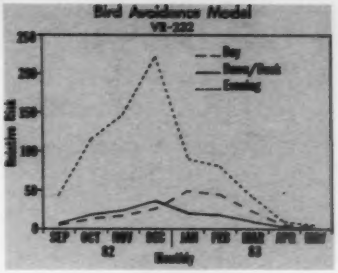


Figure 5

available to all DOD users for both existing and proposed low level routes. Data can be obtained by addressing requests to the Air Force Engineering and Service Center/Directorate of Environmental Planning, Tyndall AFB, Florida 32403. Requests should include low level route number for existing routes and longitude/latitude of turn points for proposed routes. BAM graphs like the one at figure 5 will be provided for the routes you request. This model is for waterfowl, however, if the BAM proves useful there may be further development to include data on birds of prey and shorebirds. A letter explaining the model and suggesting possible use will accompany the reply to requests for information.

Birds don't file fight plans but they do fly in the same space you use. Do them and yourself a favor and stay off their migration routes when you can, especially in the next month or so—after all, *those routes are for the birds.*

Sources:

"Bird Avoidance Model," *Flying Safety,* June 1982.
"Birdstrike Report," *Flying Safety,* September 1981.
"Panic in the Cockpit," *Approach,* November 1982.
"Bird Strike Avoidance—What's Been Done?" *Aviation Digest,* June 1976.

PEARL'S
Personal Equipment And Rescue/survival Lowdown

Connie Freihaut photo courtesy of AirCav Store

Hazard Alert

ARGON GAS was recently substituted for OXYGEN in a hospital medical oxygen distribution system resulting in fatalities. For more detailed information, consult Defense Personnel Support Center (DPSC) message 272300Z May 83. Please do not think that this only happens in hospitals. Not too long ago there was an incident involving an aircrew; luckily the pilots were on pure oxygen, but where the incident occurred was in the aircrew compartment. We highlighted this incident in a PEARL article several months ago. The bottom line—be sure what you put in as oxygen, is in fact *OXYGEN.* Use the available oxygen testers and be sure your supply personnel are aware of this problem.

ALSE Pluses For You

We cannot give everyone an "ATTA BOY/GIRL," but we can thank all of you strong supporters for keeping the "ALSE BALL" rolling. One ATTA BOY is certainly deserved by SSG (P) Wayne Engle, ALSE coordinator, I Corps and Ft. Lewis, WA 98433. Should you desire to get in touch with him, you can reach him on AUTOVON 357-5010 or 357-4755. I will quote from his latest letter: "Enclosed are the last 3 months' agendas and minutes of our ALSE council meetings which we conduct here at Ft. Lewis. We have found this to be a good way to express and share achievements, discuss new methods of use of equipment, and in general review plans and goals for the future. Critique of ALSE in field exercises is scheduled..." You too can do a lot for ALSE, and remember this area is only as good as you make it. Good sales-agents sell their product. Unfortunately, ALSE has taken a long time to get the recognition it needs, but with the emphasis and support we are getting from "top side" and your strong devotion to getting the job done *no matter what,* then we surely will be second to none—you will be the beneficiary of a good ALSE program.

Questions and Answers

Dear PEARL, recently I was required to secure some SRU-21/P survival vests for a task force I was a member of. I was utterly dumbfounded when I started inspecting the components of this vest. I found that the old flare with the screw-in cartridge, national stock number (NSN) 1370-00-886-9788 (this can be identified by the caps and screwthreads of the cartridge) was in fact a part of the vest. Didn't something come out in PEARL about 7 or 8 years ago which stated these "pen gun" flares were dangerous and are being phased out of the Army's supply system?

PEARL did some checking into this article and would you believe this information was published in PEARL, November 1975? The proper flare, NSN 1370-00-490-7362 (L119), is the only one authorized for use by Army aircrew personnel. So again, PEARL has proved her worth and especially emphasizes the importance of having a good PEARL library and urges retention of all copies for future use.

Flare (L119) SRU-21/P

We are still receiving telephone calls from users stating they are having difficulty in securing this flare, NSN 1370-00-490-7362 (L119). This item is an essential and vital component of the SRU-21/P survival vest. We asked the Armaments Command, which manages the item, and have been assured that there are plenty in stock on hand. Should you still have problems, please send a copy of your requisition to us with full information; perhaps the problem could be local, but with all our ALSE expertise in the field, we should be able to pinpoint the problem and ensure that you get what is needed for your "survival," or possible rescue some day.

If you have a question about personal equipment or rescue/survival gear, write PEARL, DARCOM, ATTN: DRCPO-ALSE, 4300 Goodfellow Blvd., St. Louis, MO 63120, or call AUTOVON 693-3307 or Commercial 314-263-3307.

"Hangar Talk" is a quiz containing questions based on publications applicable to Army Aviation. The answers are at the bottom of the page. If you did not do well, perhaps you should get out the publication and look it over.

FM 1-202
ENVIRONMENTAL FLIGHT

CW3 Gary R. Weiland
Directorate of Training Developments
U.S. Army Aviation Center
Fort Rucker, AL

1. Ice fog can cause severe structural icing.
a. True b. False

2. What will be the first sure sign that an aircraft has entered icing conditions?
a. Increased power requirements
b. Increased exhaust gas temperature
c. Ice on the windscreen
d. Increased vertical vibrations

3. Desert mirages normally are evident when looking:
a. Toward the sun
b. Away from the sun
c. At right angles to the sun

4. In helicopters, the best procedure to minimize blowing sand and dust is to make:
a. A running landing
b. An approach to the ground
c. An approach to a hover

5. In a jungle environment, rubber-covered items should be cleaned frequently and lubricated lightly with:
a. Petroleum jelly c. Brake fluid
b. Engine oil d. Hydraulic fluid

6. Dry bamboo makes an excellent fuel for cooking fires in a jungle survival situation.
a. True b. False

7. When flying in the mountains, aviators have a natural tendency to judge their airspeed as too _____and altitude as too _____.
a. Slow—high c. High—high
b. High—low d. Slow—low

8. The shallow approach is the standard approach used in mountainous terrain.
a. True b. False

9. If the leaves on deciduous trees appear to be light in color (silver), you are flying downwind.
a. True b. False

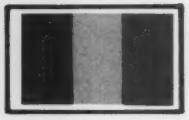
10. The general gas law states that the density of a gas varies directly with temperature and inversely with pressure.
a. True b. False

Correction:
May 1983 *Aviation Digest*, Hangar Talk, page 36, answer 8 should have read:
c, para 88E, pg 28

Answers

1. B, para 1-3c (1)
2. C, para 1-3e (4)
3. A, para 2-10
4. A, para 2-16a
5. C, para 3-16c
6. B, para 3-27
7. A, para 4-12b
8. B, para 4-16a
9. A, para 4-20c(1) (d)
10. B, Appendix D, para D-4c

RSI Report



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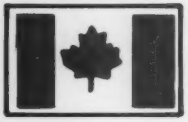

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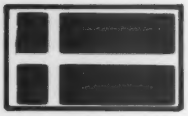

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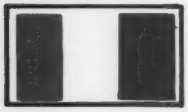
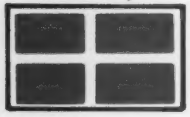


France

Federal Republic of Germany



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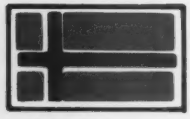
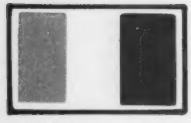


Iceland



Italy

AVIATION UNITS that may be required to operate as a joint national force should be aware that the U.S. Army has ratified a NATO standardization agreement (STANAG 3907, Cross-Servicing of Helicopters Engaged in Land Operations) that dictates the procedures for the cross-servicing of helicopters. As a signatory to this agreement it is incumbent upon Army Aviaton units to abide by the terms of the STANAG. Units are encouraged to use this document as a guide for the development of their SOP.

Units that are subject to this agreement are encouraged to validate the content of the STANAG. If it is determined that there are terms of the agreement that should be considered for changes, a standard DA Form 2028 should be submitted.

STANAG 3907, Cross-Servicing of Helicopters Engaged in Land Operations.

1. Aim. The aim of this agreement is to define the requirements of and responsiblities for cross-servicing helicopters in multinational land operations so that existing capabilities can be fully used. For helicopters other than those engaged in land operations, see STANAG 3430 (Responsibilities for Fixed and Rotary Wing Aircraft Cross-Servicing).

2. **Agreement.** Participating nations agree to cross-service helicopters engaged in land operations according to the following principles:

a. Helicopters engaged in land operations will normally be cross-serviced locally on a temporary basis.

b. Other nations' helicopters will be serviced without specific logistic preparation to the extent allowed by the task of the host helicopter unit. This servicing will be provided from the facilities and stocks available for helicopters of the host unit.

c. Cross-servicing that exceeds the capacity of the host helicopter units will require additional logistic activity by and consultation between the commands concerned.

d. The organization to which the helicopter is assigned may be charged for services rendered. STANAGs 2135 (Procedures for Emergency Logistic Assistance) and 3113 (Provision of Support to Visiting Personnel, Aircraft and Vehicles) outline the procedures that permit reimbursement for these services.

3. **General.** Member nations have in use a wide variety of helicopters, weapons and equipment that must be considered when implementing this agreement. Member nations must know the compatibility of fuels, lubricants, weapons and equipment so they can use existing capabilities and plan for any additional logistics.

4. **Definition.** The following term and defintion is used for the purpose of this agreement. *Cross-Servicing of Helicopters Engaged in Land Operations.* The provision of personnel, equipment and consumable supplies by one nation, at a field site, to assist the aircrew of another nation in preparing its aircraft for further commitment.

5. **Operational Considerations of Helicopter Cross-Servicing.** Helicopter cross-servicing will be provided on a temporary, local basis to helicopters of allied nations that are deployed without organic ground elements and that must be committed rapidly to maintain the momentum of operations.

6. **Responsibilities.** Coordination between the visiting and the host units should be initiated as early as possible.

7. **Responsibilities.** Consistent with resources available in excess of its own immediate requirements and STANAG 3628 (Helicopter Tactical Refueling), the host unit shall provide:

a. Personnel and equipment to assist the aircrew in:

(1) Rearming weapons.
(2) Refueling helicopters.
(3) Ground movement and camouflage of helicopters.

(4) Guarding helicopters.

b. Fuels, lubricants (POL, hydraulic fluids), compressed air and nitrogen.

c. Munitions/missiles.

d. The same service support it provides to organic aircraft if equipped with the same type and series. Such servicing shall include:

(1) Furnishing personnel to perform appropriate inspections in accordance with the visiting unit's inspection checklist.

(2) Performing minor repairs within the host unit's capability.

NOTE: Usually, the assisting ground crew will have no special qualification to handle the type of helicopter to be serviced.

8. **Responsibilities.** The visiting unit shall:

a. Establish timely liaison with the host unit.

b. Provide appropriate refueling adaptors, if required.

c. Provide the appropriate cross-servicing guide to the host unit, if required.

d. Be responsible for any necessary inspections and supervision of rearming and replenishing their aircraft.

NOTE: Safety pins (for items requiring them) shall be carried in helicopters on all flights. NOTE: Rotor blade tiedowns shall be carried in all helicopters that require the rotor blades to be tied down after flight.

9. **Responsibilities.** In all cross-servicing operations, the helicopter commander shall bear full responsibility for the cross-servicing actions performed on his helicopter. This responsibility includes adequate briefing and supervising of ground crews on their specific duties.

10. **Cross-Servicing Guides.** Cross-servicing guides shall be prepared for each type of helicopter declared cross-serviceable. These guides shall:

a. Contain sufficient information to perform the necessary cross-servicing.

b. Be issued in English or French, and by bilateral agreement be translated into the language of the host nation.

c. Be prepared in accordance with Annex A.

d. Be kept current by the issuing nation. Changes shall be made by replacement of the complete guide.

e. Be used by the servicing nation to determine specific servicing materials required and correct procedures to be followed.

f. Be carried aboard the aircraft to be serviced.

NOTE: Annex A has not been printed with this article. It contains a detailed description of a cross-servicing guide. These guides will be prepared by the appropriate command and distributed to units requiring their use.

11. **Training.** Training for cross-servicing of helicopters shall be accomplished, where possible, through the exchange of fly-in familiarization training by the helicopter units. Follow-on training may be conducted during field training exercises involving more than one nation.

12. **Requirement for Cross-Servicing of Helicopters.** The operational command will identify the helicopter types which need to be cross-serviced and the commands between which the cross-servicing is to be accomplished. These requirements will be passed to the appropriate national points of contact who will be responsible to:

a. Prepare and arrange for the distribution of Cross-Servicing Guides.

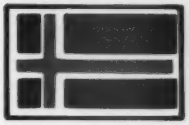
b. Prepare and issue any necessary national regulations and documentation required for cross-servicing of helicopters.

c. Exchange information to facilitate the implementation of this STANAG.

If this article has generated any questions or requirements, please contact Mr. Rush Wicker by writing: Commander, U.S. Army Aviation Center, ATTN: ATZQ-D-CC, Ft. Rucker, AL 36362.

Luxembourg

Netherlands



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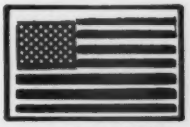


United States

Professionalism and Mutual Trust

HAVE YOU EVER wondered why:

So many redundant flight-related events occur in the day-to-day operations of many aviation units?

It takes hours of preflight and administrative effort to accomplish a 1-hour flight?

Some aviators insist on making a detailed inspection of the tail rotor drive shaft, or disassemble the engine cowlings after crewchiefs have inspected the areas as a part of their daily inspections?

Maintenance personnel shudder when aircraft for which they are responsible are assigned to aviators whose reputations for recklessness and derring-do far exceed their abilities?

There is a persistent undercurrent of thought inherent in these questions, and possible conclusions can be drawn.

If such questions develop within an organization, chances are that a situation exists where the professional competence of the aviators and maintenance personnel is questioned, and the necessary teamwork between the two is lacking at best, and nonexistent at worst. When a unit is confronted with this type of situation, you can bet your boots that the root cause of mutual distrust is the failure of all concerned to meet accepted operational and professional standards.

Army Regulation (AR) 95-1 states that "...standards must be met and observed by aircrew and maintenance personnel to ensure safe, orderly flight and mission accomplishment." The regulation does not single out one individual but calls on the entire flight/maintenance team to maintain acceptable standards. If any member of the team abuses aircraft by unacceptable flight techniques or maintenance practices, unit combat readiness is compromised. Mutual trust is absolutely necessary in our profession and it need not be such an illusory goal in the aviator/maintenance interface. It can and will be achieved when total *professionalism* is displayed by all members of the aviator/maintenance team.

The goal of mutual trust is enhanced when team members display a personal pride in a job well done. Personal pride is absolutely indispensable in the development of an atmosphere of total professionalism. Personal pride is nurtured by the timely recognition of laudable performances (individual and unit) by supervisors and commanders. Individuals who are assigned tasks and perform them well should be rewarded with the recognition they deserve. Crewchiefs performing by-the-book daily maintenance inspections see very little reward for their efforts when the aviator repeats the inspection. Conversely, individuals who perform tasks poorly should be removed from the job and replaced by someone who accepts the challenge to perform in a professional manner. Just as personal pride is essential to professionalism, the concept of total professionalism must be all-pervasive in the minds of Army Aviation personnel before mutual trust can be a reality.

Who is responsible for achieving total professionalism and mutual trust? The responsibilities of the unit commander are clearly defined in AR 95-1 as are those of the crewmembers and maintenance personnel. They all have their parts to play. The fiat of the regulation is one thing; the attitudes of the personnel are another. Unit excellence is achieved when commanders accept nothing less than total professionalism within their organizations. Their supervisory personnel must be of a like mind and must not tolerate or gloss over nonprofessional performance. Their crewmembers and maintenance personnel must show a personal pride in their professional competence and refuse to affix their signatures or approve work that does not display such competence. Accomplish the mission the way it is supposed to be done. *By the book*—the operator's manual, maintenance manual, the handbook or standing operating procedures. The book exists because the trained professional using poor judgment is like a computer which occasionally may blow a fuse or feed back the wrong information. Good intentions don't quite fill the bill for a professional.

Only when we have achieved total professionalism and mutual trust can we begin to consider reducing preflight and administrative tasks and eliminating redundant procedures that detract from efficient operations.

DES welcomes your inquiries and requests to focus attention on an area of major importance. Write to us at: Commander, U.S. Army Aviation Center, ATTN: ATZQ-ES, Ft. Rucker, AL 36362; or call us at AUTOVON 558-3504 or commercial 205-255-3504. After duty hours call Ft. Rucker Hot Line, AUTOVON 558-6487 or 205-255-6487 and leave a message

AVIATION PERSONNEL NOTES

CAS³ Partial Credit for Nonresident CGSC

The Department for Nonresident CGSC Studies will grant CAS³ graduates partial credit for the nonresident CGSC program. The new program is called CAS³ CGSC "Equivalency Cross-Walk." CAS³ graduates will be given constructive credit for CGSC (NR) Subcourses 1, 3, 4, 5 and 85 (writing requirement). This equates to 200 hours of the 554-hour NR CGSC correspondence work.

CAS³ graduates who apply for the CGSC correspondence course should ask for equivalency credit on their application. Credit will be granted accordingly. The constructive credits may change over the years ahead as the curriculum is revised.

Funded Legal Education Program

The Army's Funded Legal Education Program permits up to 25 Army officers to attend law school at government expense while on active duty. This program is open to officers (0-1 through 0-3) on active duty who will have at least 2 but not more than 6 years of active duty at the time the legal training commences. Further eligibility requirements and the application procedures are set forth in AR 351-22, 15 October 1981.

Eligible officers interested in applying should register for the June or October offering of the Law School Admission Test. Ensure the original application arrives at the Office of the Judge Advocate General by 1 November 1983. Send the application through channels (including the officer's branch manager in MILPERCEN) well in advance of the deadline.

Hot Sticks—Read This!

The National Aeronautics and Space Administration (NASA) is looking for a few good astronauts.

Specifically, they want about 12 new crewmembers (pilots and mission specialists) to join their organization in July 1984. Two Army officers are currently detailed to NASA as mission specialists. Lieutenant Colonel Bob Stewart reported to Houston in July 1978 and Major (P) Woody Spring reported in June 1980.

Army personnel (Active and Reserve Component) meeting the established prerequisites may apply for this highly challenging program using application procedures available at their servicing military personnel office (MILPO). The Army nominee selection board will be held at the Military Personnel Center (MILPERCEN) in November. NASA will select from nominees in early 1984.

Successful applicants will join the Johnson Space Center in July 1984 and be assigned to the Astronaut Office. They will then be placed in responsible technical or scientific positions for a period of 1 year. This year is a training and evaluation period during which astronaut candidates receive assignments allowing them to contribute to the Space Shuttle Program and continue work in their scientific or technical areas of expertise. They are also enrolled in the basic astronaut training program allowing development of background knowledge and skills that will be required for their formal mission training upon selection for their first flight.

Applicants should be aware that selection as an astronaut candidate does not ensure selection as an astronaut. Final selection is contingent upon satisfactory completion of the 1-year training and evaluation period.

Successful Army candidates will be detailed to NASA for a time period established by NASA/DOD Memorandum of Understanding (MOU). The most recent MOU specifies a 7-year tour of duty. Army astronauts will remain (or be placed on) active military status for pay, benefits, leave and other military matters.

If you are interested, contact your MILPO. MILPO Letter Number 83-21, "Army Astronaut Selection Program," dated 2 June 1983, contains the prerequisites and application procedures.

photo by Pamela Bellman

First Lieutenant Michael Honeycutt
C Company
1st Aviation Battalion (Combat)
Fort Riley, KS

The author describes a multitude of tasks that pathfinders of C/509 have been specially authorized to perform in a test environment. They are related here to help foster thought that will more fully develop the role of the pathfinder as perceived for the AirLand Battle 2000. Most units are not authorized to perform these tasks, and this article should not be taken as a license to do so.

ARMY pathfinders have come a long way since their inception in World War II when they were first to jump in some of our largest and most historic airborne assaults—Normandy, Holland and the Rhineland. Their mission in those days was terminal guidance of the airborne force. Air Force combat control teams (CCT) now provide this function to the airborne force, and the Army pathfinders' primary mission is to provide navigational assistance and control of Army aircraft into areas designated by support unit commanders (FM 57-38).

Today, soldiers receive schooling and training in pathfinder techniques at the Pathfinder School, Ft. Benning, GA. There, they are taught various skills, with emphasis placed on drop zones, helicopter landing zones and ground-to-air communication. They also participate in paradrop operations, rappelling and some slingload instruction. These soldiers work in small sections and are graded on their performances.

The Pathfinder School lays a basic foundation for its students. But today's field situation includes the introduction of more highly sophisticated aircraft and the increased importance of helicopter special operations. This demands that pathfinders be further trained and versatile enough to perform a number of additional missions.

photo by NoelKenya Atkins

LEFT: PVT 2 Timothy C. Edwards from Company C (Pathfinder/Airborne), 509th Infantry at Ft. Rucker, AL, waits for the rappel master's command to go. PVT Edwards will descend 120 feet from a UH-1H Huey to the ground, supported only by a rappel rope and a snap link, in about 8 seconds. Rappelling is a method used to insert troops into otherwise inaccessible areas in a combat environment.

TOP RIGHT: Jump commands are given and static lines are controlled—these are vital to a successful parachute jump for Company C. Working a recent jump are, foreground, from left, SSG Patrick T. Springman, SGT Russell A. Grindle, SSGs Peter G. Motta and George A. Coe.

BOTTOM RIGHT: SGT Ty W. Shute, on top, is the victim of SGT Russell A. Grindle in an advanced over-the-head throw movement, part of Company C's normal hand-to-hand combat training at Ft. Rucker, AL.

photo by Susan Gibbs

During recent Department of Army force development test and experimentation exercises, Ft. Rucker's C Company, 509th Infantry (Pathfinders) proved that Army pathfinders can successfully perform a number of additional tasks and work with aircraft in various tactical situations. Using night vision devices and various lighting configurations, Charlie Company has conducted terminal guidance, aircraft assembly, aircraft loading, unloading, hot refueling and rearming of Army helicopters in total darkness.

Charlie Company Pathfinders, equipped with night vision goggles (NVG), set up infrared (IR) lights and experimented with various patterns. Marshallers used flashlights or wands masked to the naked eye but visible to pilots flying with NVGs. Using standard NATO hand and arm signals, these pathfinders had positive control over each aircraft and greatly assisted pilots during NVG landings.

Additionally, pathfinders were trained to hot refuel and rearm aircraft in darkness. The helicopters were able to land at designated points, be refueled and rearmed, and continue their missions, all under the cover of darkness. Pathfinders were also taught to assemble and disassemble aircraft to accommodate loading and unloading on Air Force aircraft for fast deployment-type exercises. The pathfinders need only to be equipped with AN/PVS-5 or some type of night vision goggles to perform their duties. Also, they would carry IR lights, wands, headlamps and radios to supplement their standard equipment.

More recently, a small group of pathfinders from C/509 worked with the AH-64 Apache using the laser spot tracker, and also with the AH-64's forward looking infrared (FLIR) system. These devices facilitate the crew's ability to locate landing zones, refuel points or possible target locations. With the fielding of sophisticated aircraft and systems, Army pathfinders will prove invaluable to aircraft or ground commanders.

By working with its counterpart, the Air Force CCT, the pathfinders can learn numerous skills and techniques of working with aircraft. The Air Force CCTs use sophisticated radios and other modern equipment that also could be used by pathfinders. The Army could gain significant benefits from working and exchanging training with the CCT, which in turn could learn much from our highly professional soldiers. Both the Air Force and Army would gain tangible and intangible advantages in an exchange-type program.

Army pathfinders can be trained to accomplish almost any mission dealing with Army aircraft. Additionally, Army aviators feel more comfortable with pathfinders assisting them. In a future scenario, pathfinders could be inserted across the forward line

of own troops by FLIR equipped helicopters to predetermined points, where they would set up rearm and refuel points.

In total darkness, Air Force aircraft loaded with attack helicopters could land close by and be off-loaded and assembled by pathfinders. Using handheld stingers, pathfinders could help establish security as the attack helicopters fly to the forward arming and refueling point and marry-up with CH-47s/UH-60s (internal fuel/ammo) for arming and fueling to accomplish the missions of AirLand Battle 2000.

Pathfinders at each point are equipped with secure radios and either beacons or heat-type strobes to assist aviators. From these points, pilots would fly close to target areas and, assisted by pathfinders with handheld laser designators, fire laser-guided HELLFIRE missiles to destroy their targets. Pathfinders could then be extracted by aircraft and flown to their secured areas.

Today's pathfinders should be trained to perform and teach these types of operations. New innovations should be incorporated into the Pathfinder School at Ft. Benning and units should be taught by pathfinders experienced in modern-type operations.

Army pathfinders should be introduced to new equipment such as ANVIS (aviation night vision imaging system) goggles, GLLD (ground laser locator designator) systems handheld target designators, and have the chance to experiment with and use them.

Pathfinders trained and equipped with modern devices such as those mentioned, and new equipment yet to be developed, can provide Army Aviation with the people needed to accomplish any type of operation that uses modern tactics and aircraft. The training of our pathfinders must be modernized to keep pace with developments in Army Aviation. These soldiers can and should be used for all missions of these types.

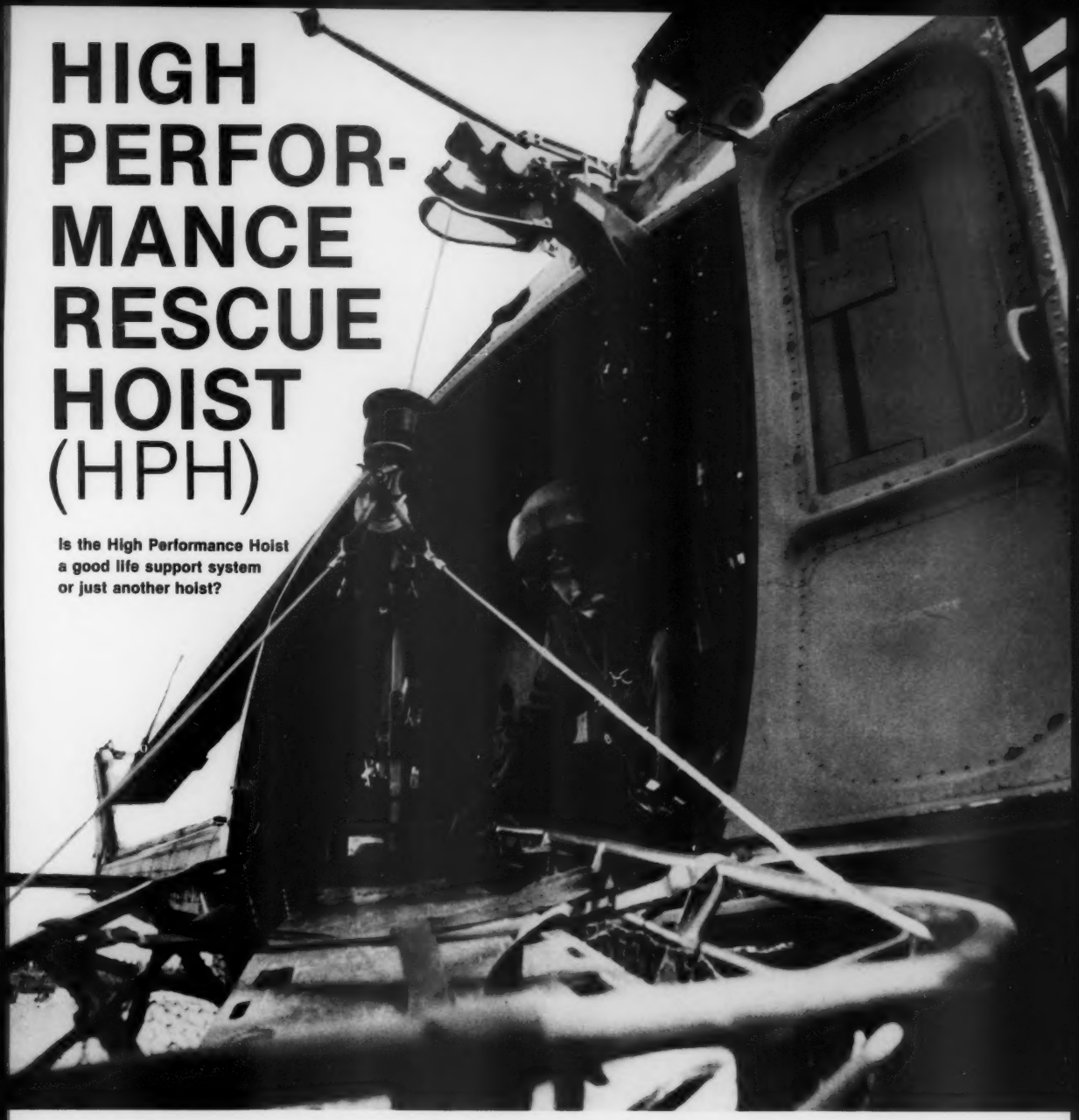
With the proper training, pathfinders can perform any mission required of them, and more. With Army Aviation as a branch and a key member of the combat arms, commanders can use modern tactics and pathfinders in conjunction with their aircraft to experience greater success and more versatility on today's high technology battlefield.

PFC James R. Dryburgh, above, a member of Company C, provides terminal guidance for a UH-1H Huey as it lands in a simulated tactical environment near Ft. Rucker, AL, while PFC Karl E. Titze acts as ground-to-air radio operator for the student aviator piloting the aircraft.

photo by Pamela Bellman

HIGH PERFORMANCE RESCUE HOIST (HPH)

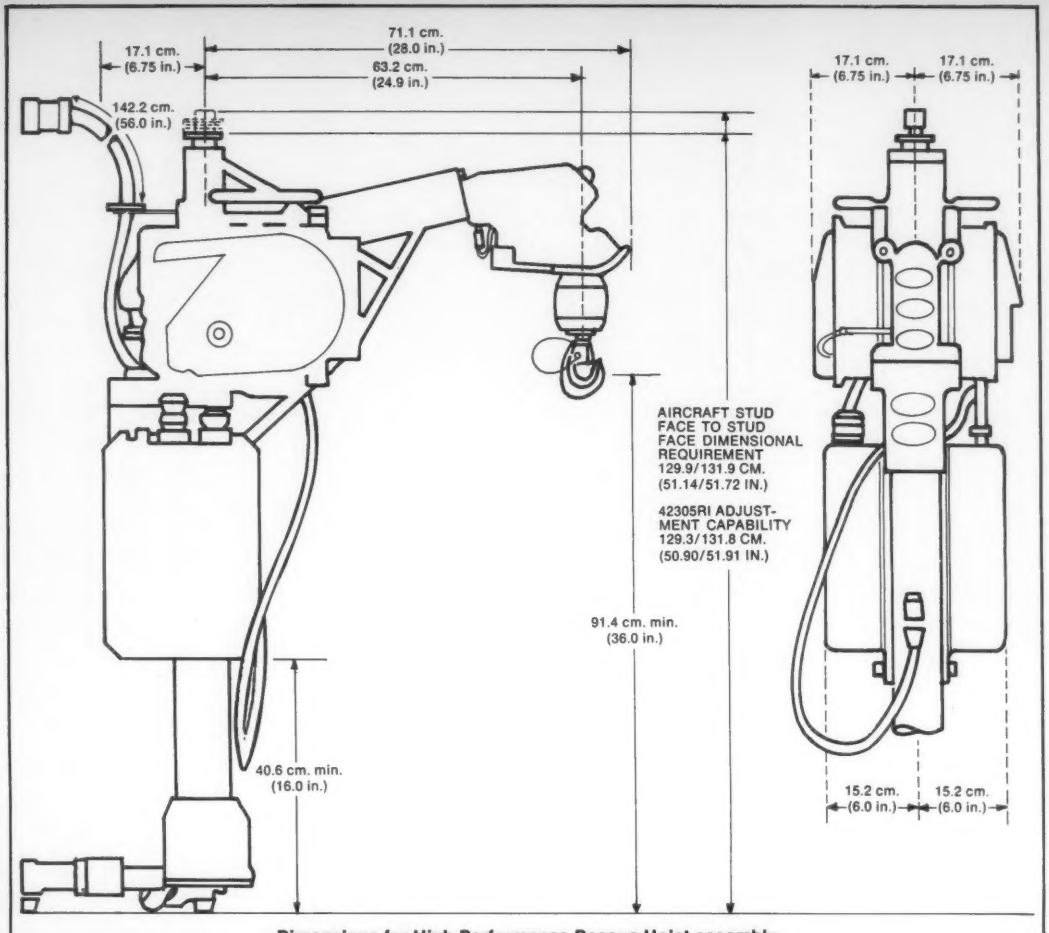
Is the High Performance Hoist a good life support system or just another hoist?



Staff Sergeant Jim A. Fowler
Hq, Fifth United States Army
Fort Sam Houston, TX

photographs and art courtesy of Western Gear Corp.

THE TITLE OF this article poses an interesting question. Much discussion has taken place, both verbal and written, comparing the Western Gear Corporation's high performance hoist (HPH) to the old Breeze Hoist. The HPH in use today was type classified for limited procurement to meet emergency medical evacuation requirements that surfaced when use of the Breeze Hoist was stopped



Dimensions for High Performance Rescue Hoist assembly.

Specifications

Rated Load 0.27 metric tons (600 pounds)	
Rated Speed, Reeling in	
0.27 metric ton load (600 pounds)	46 meters per minute (150 feet per minute)
0.14 metric ton load (300 pounds)	84 meters per minute (275 feet per minute)
Rated Speed, Reeling out	90 meters per minute (295 feet per minute)

Usable Cable Length (Cable Reach)	76 meters (250) feet
Electrical Power Requirements	28 volts DC at 125 amperes
Lift Cone Angle, Allowable	60 degrees (30 degrees from vertical)
Temperature Range, Operational	-54 °C(-65 °F) to 52 °C (125 °F)
Weight	79 kilograms (174 pounds)

for safety reasons. The Army currently is staffing a requirements document to obtain bids from which a new hoist that meets all requirements can be selected.

Since the HPH system has been fielded, problems are starting to surface. Research has been initiated to find solutions to these problems, so that the HPH may be used for its design intention of "lifesaving." We, as users, must attempt to keep

an open mind, and try to give the HPH a chance to prove itself.

As with any other piece of equipment or system the Army gives us, the HPH is only as good as the user. The Army developed specific training guidelines, including classroom and hands-on training for the HPH, to ensure that we, the users, have the knowledge to operate the system; however, if we don't use what we are taught, the system is useless. The guidelines for installation, use, removal, inspection, maintenance and storage are spelled out in as much detail as possible in the applicable publications and are constantly being improved through the users' 2028 program. If these are followed, the HPH will complete its mission.

During initial training all personnel concerned (i.e., pilots, crewchiefs, medics, etc.) attend classroom training, and must perform five pickups with dummy loads before attempting a live pickup. In addition, they must perform a specified number of practice pickups within a certain time to remain current with the HPH. Commanders should ensure that adequate refresher training is given during regular unit training to keep personnel well informed about the HPH. After all, the people should know as much about the hoist as about the aircraft, medical kit or other equipment they use for mission completion.

The current and pressing problem with the HPH is that several incidents have occurred where inadvertent loosening of the upper quick release adapter (see figure) has caused the HPH to either fall in or out of the aircraft. An investigation by the U.S. Army Safety Center, U.S. Army Troop Support and Aviation Materiel Readiness Command (TSARCOM), and the manufacturer has determined that these incidents have been caused by design, and/or installation deficiencies. The aggravation by installation deficiencies reemphasizes the need for *strong training programs and careful handling of the HPH system.*

The High Performance Hoist in operation.

In message P 081545Z APR 82, from TSARCOM, the fix for the upper quick release adapter is to pull a complete inspection as per the instructions in the message, and to add an adjustable automotive type hose clamp large enough to fit over the collar and wide enough to fit between the roll pin stop at the bottom edge of the shaft and lower edge of the locking collar. This clamp will help to prevent inadvertent release. As per the message, the HPH was restricted from live pickups, other than urgent.

TSARCOM has since released the HPH fully for use with the UH-1H/V but restricted the HPH from use with the UH-60A Black Hawk aircraft unless the attaching upper hoist bracket on the UH-60A conforms to instructions in TSARCOM message P 111930Z JUL 83. TSARCOM has directed research to design a new quick release adapter for the HPH, and this new version will be fielded upon completion of design and testing without the use of the hose clamp.

The HPH is an excellent system, but it must be maintained and used properly. Proper maintenance and inspection procedures must be followed, the equipment must be installed and used properly, and above all—as should be done with all equipment in Army Aviation—think "SAFETY FIRST."

MONTHLY WRITING AWARD

THREAT

Mr. Edward J. Bavaro
Threat Section
Directorate of Combat Developments
U.S. Army Aviation Center
Fort Rucker, AL

Soviet Pilots

How do they measure up?

Soviet pilots' training spans 4 years of studies which include general military, political, flight-related (200 to 250 flying hours) and engineering subjects. Their unit training consists of pilots flying 80 to 100 hours annually in combat aircraft and training in flight simulators.

ONE OF THE MORE notable changes in U.S. Army Aviation circles is the greater individual awareness of threat systems—Soviet aviation and air defense particularly—by our aviators. The 1973 Mideast War provided us a vivid picture of the sophisticated air defense threat environment in which Army aircraft could expect to operate in the future. That short, intense October conflict, featuring the Soviet-equipped and Soviet-advised Egyptian and Syrian Armies, was a preview of coming attractions for the high threat environment we could face elsewhere on a grander scale. All the firepower and mobility that helicopters provide could go wanting if we do not solve the problem of suppression and survivability in a highly advanced threat environment.

The U.S. Army Aviation Center, Ft. Rucker, AL, has played a prominent role in the reorientation of our aircrews for employment in a more significant threat environment than was found in Vietnam. The initial entry rotary wing program of instruction was revised with the purpose of producing graduates better prepared to fulfill their roles in aviation units. In the words of Major General William J. Maddox Jr., commanding general of the Aviation Center at that time, "We must make these graduates assets rather than training liabilities" to the gaining units. Flight training at the Aviation Center, while maintaining overall quality, increased the emphasis on the tactical skills by expanding the tactics portion of the flight school to include Night Hawk and night vision goggles (NVG) qualification. The academic instruction underscores

recognition, as well as knowledge, of threat systems. This is reinforced in the daily instructor pilot-student flight line briefings.

The most successful aspect of our aviators' threat awareness, however, stems from the follow-on training conducted in the units to refine combat flying skills and to ensure aircrews are kept abreast of current threat systems and capabilities. The partnership between the Aviation Center and trainers in the units is served by the feedback which allows the Aviation Center to adjust training to meet field unit needs. The first step toward developing an effective training program is to maintain an active threat-awareness program in units. This combination of a responsive student training program of instruction and a functional, challenging unit training program virtually ensures unit readiness.*

Given, then, that we are actively developing and improving our knowledge of threat systems and their strengths and limitations, we should go further and try to learn more about our counterparts—the Soviet pilots. These aircrews will have increasing significance in the threat arena now that helicopters (especially attack helicopters) are becoming a more prominent part of the Soviet force structure. Just how good are they? How can we assess the skill of these potential adversaries? Let's see what we can find out about them and compare their status to ours.

Soviet Student Pilot Training

First, let's consider the individuals screened for flight training and how training compares to U.S. training alluded to earlier. Selection for pilot training is stringently controlled, based on academic achievement and competitive entrance examinations. The many aeroclubs throughout the Soviet Union provide a large source of individuals of proven aptitude as potential student pilot candidates. The best from these aeroclubs compete for selection to the military aviation academies. Once accepted, the candidates receive a formal course of training spanning 4 years.

The academic studies cover general military and political training and flight-related courses, as well as normal engineering subjects. These Soviet higher military aviation schools are equivalent to service academies in the United States. The instruction, both academic and flight, is considered excellent. The flight instruction is estimated to include about 200 to 250 flying hours over the 4-year program.

Helicopter student pilots progress from the Hoplite to the Hound to the Hip during their training program. Soviet flight schools usually "wash out" about one-third of their students (generally for medical or flight deficiency reasons). While most of the instructors have not had previous tactical experience, veterans from the Afghanistan fighting are probably being channeled to instructional staffs, or they are at least participating in the decisions relating to the flight training syllabus.

Graduates are commissioned as junior lieutenants with the title of pilot engineer. Pilot class ratings are earned at the operational unit, the first being pilot third class. The accompanying figure shows the pilot ratings in the Soviet Air Force.

Rating	Combat	Qualified Day/Night	Weather	IP Rated
Pilot 3d Class	Limited	Day only	Clear	No
Pilot 2d Class	Certified	Day/night	Day—poor/ Night—clear	Possible
Pilot 1st Class	Certified	Day/night	Day/night—poor	Yes
Sniper	Certified	Day/night	Day/night—poor	Yes

The highest rating, Sniper, is held by only 5 to 10 percent of unit pilots. They are deemed to be weapons experts and capable of fulfilling all combat tasks under all conditions. Class ratings are unrelated to military rank and must be recertified annually. Their student selection criteria and the quality academic instruction may somewhat offset the concentrated flight training and proficiency of our graduates. But, when comparing our *new* flight graduates with the Soviets' for effectiveness in the cockpit, *score one for us.*

Unit Training

Soviet units are responsible for the transition training of new pilots. The annual training program is a scheduled format covering a 10-month "training year." During this period, pilots fly 80 to 100 hours in combat aircraft and also participate in training sessions in flight simulators (instructor pilots may fly more than 200 hours). Besides annual rating recertification, Soviet pilots take a written examination which measures their knowledge of equipment, weapons and tactics. Soviet unit level training receives more attention than does ours, and combat readiness of the

*The Threat Branch, Directorate of Combat Developments at the Aviation Center, regularly supports unit level threat training by visiting Active, National Guard and Reserve units and providing threat updates.

crews is effectively checked through the use of military exercises. As a rule, these exercises are conducted as competitions between representative crews from assigned regiments. In the opinion of the Soviets, such competitive exercises reinforce the training of flight personnel and provide the incentive for them to master combat skills.

Viewed from the aspect of the gaining unit (of new graduates), however, one can make a more meaningful comparison of our system to theirs. Our graduates are more rapidly assimilated into their units than are the Soviet officer aviator graduates. The influx of new Soviet pilots can strain the gaining units, burdening the unit instructors with transition training as well as operational specialty training necessary for combat qualification. Because our pilots accrue more flight time (which equates to experience) than their Soviet counterparts do, the overall unit effectiveness and combat readiness of our units can more readily be realized. Our less regimented training environment in the units allows greater individual proficiency to be developed in various combat skills.

We have gained a significant edge over the Soviets in training through the use of simulators. The effectiveness of simulators cannot be overestimated, especially in these days of increasingly high-priced assets and escalating operating costs. Using simulators for gunnery training, instrument flying proficiency and emergency procedures to enhance aviator skills while cutting training costs should be attractive and desirable even for them. The rapid development of new aviators combined with more actual flying and supplemental training in excellent simulators more than compensates for Soviet emphasis on unit level training. *Score another one for us.*

Retention

Undoubtedly, the greatest advantage enjoyed by the Soviets is in pilot retention. Everyone recognizes the uphill battle all the military services in the United States wage against the loss of highly skilled aviators to the civilian job market. The Soviets' pilot retention rate approaches *100 percent!* Viktor Belenko (the Soviet pilot who defected to Japan with a MiG-25 Foxbat in 1976), in the book *MiG Pilot,* clearly illustrates the incentives which cause an aspiring youth to strive for and attain the status of a military aviator in the Soviet society. He states that while Soviet officers hold an exalted status in Soviet society, the lives of Soviet pilots are held in even greater esteem. Flight leaders receive more than three times the pay and benefits of their nonrated infantry counterparts. Pilots also receive higher pay than many doctors and other professionals in Soviet society, with other fringe benefits further enhancing their positions.

Belenko further states, "The very low percentage of applicants that are accepted, trained and receive wings are retained for life with rare exceptions." Obviously, an aviator with several years of cumulative flight and leadership experience cannot be replaced by a new recruit, and we are severely disadvantaged by our retention rate. The advantage we do enjoy is the retention of our enlisted aviation personnel. For the Soviets, the almost total retention of pilots is in stark contrast to the 2-percent reenlistment rate for their enlisted aviation personnel. This places a great strain on the Soviet warrant officer maintenance technicians in aviation units. Also, unit morale suffers due to the tremendous disparity between the preferential treatment given to pilots and the coarse food and hard life of the conscripted soldiers. But, because of the Soviet pilot retention factor—*score a big one for them.*

Combat Experience

The number of Army aviators with combat experience in the United States is ever dwindling, whether through attrition (retirement, civilian market, etc.) or promotion out of the cockpit, diluting a major advantage we had enjoyed for quite some time. The pendulum is now rapidly swinging to the Soviets who have been extensively operating rotary wing aircraft in a variety of combat roles in Afghanistan. The Afghanistan affair can pay dividends for refining unit and pilot skills, improving air-to-ground support measures and giving Soviet helicopter pilots experience in a live-fire environment hostile enough to cause them to adhere to operational procedures.

Afghanistan is also giving the Soviets a tremendous opportunity to test their new weapons and tactics in a "live-fire exercise" using live aggressors! The loss of combat-experienced aviators by the United States really has more far-reaching significance. As the core of hard-driving combat development staffers continues to diminish, the movement toward integrating aviation forces into combined arms roles may be slowed to the point that we may face the predicament of having commanders and staffers ignorant of aviation potential or, worse, not confident or competent in their ability to operate effectively on the battlefield. This probably bespeaks the need for proponency and the

Army Aviation Branch more than anything else. *Score another one for them.*

General Comparisons

Terrain Flying. Our aviation graduates hit the ground well versed in terrain flight and with a qualification in night vision goggles. At the unit level, we may not be providing enough challenging night training to achieve anywhere near our potential. While the Soviets are much more deliberate (i.e., slower) developing that skill (pilot retention mitigates that somewhat), their attack helicopters may have low light level sensors superior to our NVGs. Afghanistan is exposing the Soviets to the merits of terrain flying and units in Russia are probably emphasizing terrain flying in training. *Let's score this one even.*

Instrument Flying. Although Soviet aircraft have better deicing capability, and their aviators do become instrumented qualified, they also have a diluted winter flying program. On the other hand, while we stress instrument proficiency that is greatly aided by excellent simulators, we may not be sincerely perfecting day/night all-weather operations. I wonder how sincere they are in perfecting day/night all-weather operations? *Call this even also.*

Navigation. The Soviets treat maps less than 1:200,000 in scale as State secrets (maybe Belenko could tell us why). This mania may reflect an often heard criticism of their ability to read maps. That they acquire this skill must be conceded them, but the question is how long does it take! The U.S. Army Aviation Center places great emphasis on this aspect in the tactics portion of flight school and generally it is carried on and improved upon at the unit level. *Give us a slight edge here.*

Maintenance Considerations. The Soviet aviators' academic training besides providing a degree in engineering, equips graduates with a solid background in maintenance. Our program through the years has deemphasized aircraft maintenance training to pilots as aircraft have become more sophisticated. The hands-on training that student pilots received back in the day of the reciprocating engine has been eliminated, leaving most classes today dealing with systems, theory and principles. Our people (other than those with assigned responsibilities) become conversant with maintenance on a personal basis (concerned people want to know) by becoming "hangar rats." On the other hand, while the average Soviet pilot is more knowledgeable in the functioning of his aircraft's various systems, our maintenance support is far and away the more responsive. All Soviet major maintenance is handled at central depots, a system that historically extends the aircraft downtime significantly. So, for what it's worth (and we could debate that), Soviet pilots have a better grasp, technically, on the various systems of their aircraft. Give them that *advantage...our advantage* is that our aircraft will be available more often for assignment on the line.

Human Considerations. When our aviators step into their cockpits, they surround themselves with technology representative of the great strides in aircraft survivability and human engineering of the past decade. Granted, we didn't get the AH-56 Cheyenne or the S-67 Blackhawk, but the quality and responsiveness of our technology is unmatched. The Soviets, on the other hand, are masters of reverse engineering and low risk technology which precludes major system performance gains and stifles innovation. (How many Soviet aircraft can you identify as a reproduction of a successful U.S. aircraft?) Soviet pilots may not be aware of this technological edge, but we can draw some comfort from it. *Advantage to us, please.*

Initiative. Belenko mentions the problems of the Soviet bureaucracy and the adverse impact of the ever-present political officers and KGB personnel. This stifling atmosphere has long served to destroy initiative. Belenko contends *that lack of initiative* has become a national characteristic that may be hard to alter. However, there has been an impressive increase in the stress on pilot initiative in Soviet writings. Department of Defense publication *Soviet Military Power* marks improvement in this area. The influence of helicopters on the modern battlefield will require quick reactions, decisions and flexibility. How will Igor respond? *You decide this one.*

What does all of this mean? The interpretation of the advantages could be debated endlessly and probably does not go deep enough to allow an educated judgment. As a potential adversary, however, we must recognize the Soviet helicopter pilots as skilled professionals with excellent discipline. Their dedication is unquestioned. They are the product of a deliberate and discriminating selection process that is willing to invest a 4-year, academy-type education and flight training program in their development, followed by unit training for combat and instrument proficiency. One naturally wonders how they would measure up as the product of an accelerated pilot training program during a mobilization. Can they compress their program without greatly affecting aviator quality?

What do you think? *How would they measure up?*

The new refined Skill Qualification Test

Because of the new initiatives affecting the refined SQT program, very little has been published targeted toward the individual soldier. This article explains the program. Sources were taken from recent correspondence with U.S. Army Transportation School and Center, Ft. Eustis, VA, published fact sheets, U.S. Army Training and Doctrine Command regulations and Army regulations.

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SKILL QUALIFICATION tests are used to assess the proficiency of soldiers in their military occupational specialties and skill levels. They also identify and reflect the effectiveness of training programs and products. Army Regulation 350-37, "Individual Training and Evaluation Program" (to be published), describes the individual evaluation program of which the SQT program is a viable part.

The SQT formerly consisted of three parts: a hands-on component, a job site component and a skill component. The new refined SQT will also consist of three parts: an informal hands-on evaluation, a hands-on common task test and a written test (MOS specific).

Informal Hands-On Evaluation

The informal hands-on evaluation is a key part of the refined SQT, and it allows units to routinely evaluate those soldier's manual tasks critical to the unit mission. Selection of tasks to be evaluated is based on the trainer's guide for the particular MOS and the unit's combat mission and equipment. The unit commander determines the tasks to be evaluated and selects the tester who usually will be the trainer (immediate supervisor). MOS skills may be evaluated on the job in conjunction with the Army Training and Evaluation Program or separately during off-line evaluations.

Soldier's manuals are currently being redesigned. As they become available, commanders and trainers will be able to informally evaluate hands-on performance on a year-round basis. The new soldier's manuals will include evaluation guides with performance measures in a checklist format. Pending revision of each soldier's manual, a soldier's manual supplement, also in checklist format, will be distributed.

The commander and trainer can use the SMSs, trainer's guides and soldier's manuals in support of

integration, train-up, merger, cross and sustainment training requirements. For example, skill level 2 evaluation guides can be used to evaluate not only skill level 2 soldiers but also to support train-up requirements for skill level 1 soldiers and sustainment training for skill level 2, 3 or 4 soldiers. The SMSs will be phased out as the new soldier's manuals are published.

Results of the soldier's performance should be recorded in the soldier's individual job book by task. The overall results will not be formally used for promotion purposes.

Hands-On Common Task Test (CTT)

Part II of the refined SQT is called the hands-on common task test. The test period for the fiscal year 1983 CTT is 1 March to 30 September 1983. The CTT will be administered annually to Active Component soldiers in skill levels 1 through 4 and at least every 2 years to Reserve Component soldiers in skill levels 1 through 4.

The CTT will evaluate the soldier's performance on 17 tasks which are listed in the CTT Notice dated 15 January 1983. The tasks are taken from Field Manual 21-2, "Soldier's Manual of Common Tasks, Skill Level 1," dated December 1982 and the SMCT Supplement dated January 1983. These documents supersede previous editions of FM 21-2. (*Note:* Units should receive one CTT Notice for each soldier in grades E1 through E7 and one SMCT Supplement for each officer and one for every five soldiers in grades E1 through E9.) General administration information is contained in the CTT Notice, and unit commanders should carefully study it.

Units should conduct individual training using the task summaries in FM 21-2 and the SMCT Supplement. Materials listed in the reference section of the task summaries may be used by the commanders and trainers in support of this training or by the individual soldiers for self-study.

The unit commander, not the training standards officer, is responsible for administration of the CTT. The CTT will be administered primarily in a hands-on mode. Backup (written) tests may be used when hands-on equipment is not available, but their use will require approval of a lieutenant colonel or above. Answers to backup tests will be available to commanders for manual scoring.

Results of the CTT will be used primarily for training purposes and will not become a part of the soldier's SQT score or be formally linked to the Enlisted Personnel Management System. However, commanders and supervisors are encouraged to consider CTT results in preparing enlisted evaluation reports and making personnel decisions.

GLOSSARY

AC	Active Component
ATC	air traffic control
CTT	common task test
FM	field manual
FY	fiscal year
ISR	individual soldier's report
MOS	military occupational specialty
MOSC	military occupational specialty code
RC	Reserve Component
SMCT	Soldier's Manual of Common Tasks
SMS	Soldier's Manual Supplement
SQT	skill qualification test
USAEREC	U.S. Army Enlisted Records and Evaluation Center

Written Test (MOS Specific)

The written test or formal part of the refined SQT will test soldiers in skill levels 1 through 4 on 20 to 35 representative soldier's manual tasks. SQT test periods are announced annually by Department of the Army Circular 350-series. The MOS-specific written test will be administered annually during a 3-month test window to AC soldiers in skill levels 1 through 4. RC soldiers will have a 6-month test window and will take the test at least every 2 years.

The SQT Notice for the written test consists of a list of candidate tasks (from the soldier's manual or SMS) which may appear on the test. (*Note:* The SQT Notice contains 50 percent more tasks than will actually be tested.) The SQT Notice will be distributed 60 days before the written test administration date at the rate of one notice for every three soldiers. Individual possession of the notice is not required.

All written tests will be centrally scored. Additionally, the written tests for skill level 1 soldiers may be manually scored at the local level by the test site manager or assistant. This will provide the advantage of immediate feedback to the soldier, trainer and commander.

Each skill level 1 through 4 soldier will be provided an individual soldier's report about 30 days after the written test is taken. The soldier's score will be

Example of Score Computation for MOSC 93H, Air Traffic Control Tower Operator

TASK	QUESTIONS ANSWERED CORRECTLY	TOTAL QUESTIONS	PERCENTAGE OF TASK PERFORMANCE	TASK TRAINING STANDARD	TRAINING WEAKNESS
1. Select Runway for Use	5	8	.62	6/8	Yes
2. Provide Emergency Assistance	4	5	.80	3/5	
3. Process Flight Progress Strips	4	7	.57	5/7	Yes
4. Take Limited Weather Observation	5	7	.71	5/7	
5. Provide Traffic Information	6	6	1.00	4/6	
			3.70		

Average task performance raw score = 3.70 ÷ 5 x 100 = 74 percent score
3.70 = Raw score
5 = Number of tasks tested
100 = Factor of percentage
Therefore, 3.70 ÷ 5 = .74, and .74 x 100 = 74 percent score

reported on the ISR. Additionally, potential training weaknesses where task peformance does not meet the established standards will be recorded on the ISR. Those tasks where some questions were missed will also be identified on the ISR, even though the established standards were met. If fewer questions are answered than required by a given task standard, that task also will be identified as a training weakness on the ISR. The standard established for each task is based on task difficulty and the total number of questions comprising that task. (An example of how scores are computed is shown in the accompanying figure).

The soldier's score will be an average task performance for all tasks tested. Task performance will be based on the percentage of questions answered correctly for each task. The average task performance score replaces the traditional use of the percent task "GO." Under the old system, soldiers were not given credit for correct answers on tasks that were graded "NO GO." They now will be given credit for all questions answered correctly.

The final score will be used for personnel management purposes and percentile ranking, and it will be reported on USAEREC Form 10A (Enlisted Evaluation Data Report). Form 10A will be mailed to the commander and soldier 60 to 90 days after the test period ends.

The Directorate of Training Developments welcomes your inquiries concerning SQTs and soldier's manuals. Direct all inquiries to: *Commander, U.S. Army Aviation Center, ATTN: ATZQ-TD-TAD-TD, Ft. Rucker, AL 36362,* or call AUTOVON 558-3889 or Commercial (205) 255-3889. After duty hours, call the Ft. Rucker HOTLINE, AUTOVON 558-6487 or Commercial (205) 255-6487, and leave a message.

Army Aviation HISTORY YEARS

Although, history of this unique group known as the Warrant Officer Corps dates back as early as 1775, it was 145 years later that Congress enacted the first legislation authorizing the appointment of 1,120 Army warrant officers and another 22 years followed before the War Department conducted a study proving that light aircraft organic to the artillery could enhance the overall mission of the Army.

Evolution of the Army Aviation Warrant Officer

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THE EVOLUTION of aviators with unusual shoulder bars and silver wings has been lost in the pages of history. Little attention has been paid to the existence of these individuals except that they functioned in a twilight zone somewhere between enlisted and commissioned officer status. These individuals belong to an elite corps of officers known as the Warrant Officer Corps.

The warrant officer rank was considered a position of distinction by many countries throughout the world and dates back to early military history. Our country, still in its infancy, appointed its first warrant officer in 1775 when a Navy chief petty officer was appointed to the rank on board the vessel *Andrea Doria*. Unfortunately, Army warrant officer history doesn't date back that far—and aviation warrant officer history dates back even less.

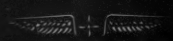
Nevertheless, Army historians have traced positions as far back as 1886. These positions were ultimately identified as warrant officer spaces even though they were held by civilian personnel. The Army Judge Advocate General determined

insignia illustrations by the author

The wreathed air service branch insignia conforms to cap insignia for noncommissioned officers prescribed in 1908. These badges were made of blackened bronze metal. However, all such insignia were discarded in December 1917, a full 6 months before the wing and propeller device came into existence as a replacement collar device for the crossed signal flags.

CAP INSIGNIA
1908

This badge was embroidered on dark blue felt, in the center was a four bladed propeller, and on either side were half wings embroidered in white silk. These wings were worn on the sleeve of the enlisted pilot. No wings were worn on the chest.



ENLISTED PILOT
1917

The collar device was the insignia of the Signal Corps upon which was superimposed, in silver, a conventionalized hemisphere showing the western continent. Top of hemisphere is on a line with top of flag staves at their junction with staff of torch attached to sides of hemisphere wings with a spread of 9 mm for each wing. The enlisted aviator collar device was the same as the officers except it was on a bronze disc. This device was approved by General John J. Pershing on 27 April 1918. It is excessively rare because few were produced in the short 80 day period before the new air service wing and propeller device was adopted.

ENLISTED AVIATOR COLLAR DEVICE
1918

Change 5 to Service Regulation No. 41, 17 July 1918, authorized new collar insignia for officers and enlisted members of the air service branch. The new insignia was similar to the enlisted pilot's cap insignia except for a few items; it didn't have the wreath around the wings and prop; the wing had a slight up-sweep at the tip of each wing; and the wings were unblackened bronze with a white metal prop. Enlisted members, including pilots, wore the same insignia on a bronze collar disc. In 1919 the air service began issuing the collar disks in bright metal.

ENLISTED AVIATOR COLLAR DEVICE
1918

This badge was authorized on 25 January 1919. The appearance was standardized to a design by Herbert Adams. It set a new pattern for wings and is still in use today by the USAF. The badge was made of oxidized silver. On 14 October 1921 the designation changed to "airplane pilot." It changed again on 10 November 1941 to "pilot badge."

PILOT
1919

This badge was authorized on 25 January 1919. The badge was made of oxidized silver. On 14 October 1921, the designation was changed to "ballon observer." On 10 November 1941, the designation was changed to "balloon pilot."

BALLOON PILOT
1919

This badge was authorized on 14 October 1921 for qualified pilots of the lighter than air service and for military aeronauts. It was made of oxidized silver and had the standardized wings with a dirigible in the center.

AIRSHIP PILOT
1921

Prior to 1942, enlisted men in the flight program were called "flight students" and those selected to become commissioned officers were called "cadets." After the flight officer legislation there was no distinction between the aviation cadet and the aviation student. All persons taking the course were called cadets with equal chance for advancement. Upon successful completion of the flight training, cadets would emerge as either a second lieutenant or a flight officer. The War Department seeking a proper description for the newly created FO stated this — "The FO is to be accepted in the nature of a third lieutenant."

AVIATION CADET CAP INSIGNIA

these positions were the same as warrant officer positions because they held a status that was neither that of commissioned officer nor that of an enlisted person. However, it wasn't until 1918 that the Army actually used the term warrant officer positions when it appointed warrant officers to fill occupations established on mine-laying vessels.

Congress established the first comprehensive legislation for Army warrant officers in the Act of 4 June 1920. This act initially authorized the appointment of 1,120 warrant officers. A turn of events occurred in 1926 when Congress reduced the Army warrant officer strength to about 650. During the period between 1922 and 1935 no appointments were made other than for band leaders and mine planters. Unfortunately, during the 1930s the Army was uncertain of its need for warrant officers and used the grade, in many cases, as a transition to reduce commissioned officer overages.

In the 1930s, military aviation was in the rudimentary development stages. One path led toward development of Army Aviation, while the other led toward the formation of the U.S. Air Force. Disagreement grew in the 1930s between the Army Air Corps and the ground forces the Corps supported over the close support mission. The Air Corps was not satisfied with its commissioned officer aviators performing missions that appeared to make them airborne truck drivers and artillery spotters. On the other side of the coin, the ground forces became increasingly unsatisfied with the Air Corp's close support.

On 9 March 1942, the War Department established three

coequal commands: Army Ground Forces, Army Air Forces and Army Service Forces. About the same time a formal test of organic Field Artillery Aviation was ordered by the War Department. The test was a success, proving that light aircraft organic to the Artillery could enhance the overall Army mission. As a result, the Department of Air Training was formed on 6 June 1942, at the Artillery School, Ft. Sill, OK, to train observation pilots in the employment of artillery fire support. Basic flight training was conducted by the Air Corps.

The original plan provided by the Department of Air Training contained provisions for enlisted pilots with the rating of staff sergeant. Though the majority of the Army's liaison pilots were enlisted at that time, the Army Ground Forces found it difficult to find enough qualified enlisted volunteers. The Department of Air Training plan was revised to include qualified personnel from the grade of captain and below. Warrant officers were not included in this plan. Additionally, although enlisted members participated regularly and frequently in aerial flights, they were not entitled to flying pay. This existed to the time of the aviation warrant officer before it was corrected.

Warrant officers, at that time, were considered to be old, crusty technicians who gained their expertise from years of experience in technical or administrative fields. Initially, the warrant officer grade was used to reward enlisted personnel for their long service, and to reward World War II commissioned officers who lacked either the education or other eligibility requirements for continued commissioned status. Although

FLIGHT OFFICER INSIGNIA
1942

The flight officer was created by an act of Congress in 1942. The FO received the rank, pay and allowances provided for warrant officer junior grade (WOJG). The FO wore the warrant officer cap insignia on the garrison cap and a small branch insignia on the overseas cap. The rank insignia was similar to the WOJG except the bar was blue on gold instead of brown on gold. The collar device was the same collar device authorized for commissioned officers in 1941. The U.S. was on one side and the branch insignia on the other.

most of the World War II commissioned officers that reverted to warrant officer status were no longer in the Army, the "reward" concept was still maintained by the Army. As a matter of fact, warrant officers became largely interchangeable with junior commissioned officers. There was no clear-cut policy on warrant officers within the Army. With apparently little supervision by the War Department, appointments, assignments, promotions, usage and training were decentralized to major commanders.

During the postwar period several changes affected Army Aviation. First, the National Security Act of 1947 established the U.S. Air Force as an independent service. Second, joint Army and Air Force regulations were established as adjustment regulations which amounted to a basic agreement on the question of Army organic aviation. The agreement contained both good and bad elements. The good news; the new status gave the Army an opportunity to fully develop the potential of its light aircraft. The bad news; the responsibility for basic flight training of Army personnel was with the Air Force.

Prior to the joint regulations the Army had been investigating the feasibility of adapting rotary wing aircraft to the Army Aviation mission and the first Army Aviation helicopter pilots were trained by the Air Corps under an informal agreement and on an individual basis. In 1947, Bell Helicopter Corporation, under contract with the Army, established the first formal Army helicopter training course at its factory. However, under the formal joint regulations agreed upon by the Army and Air Force, the Air Force claimed that it should conduct all basic helicopter flight training.

Graduates of the Air Force helicopter course came out with 25 hours of basic instruction under their belts. The Army felt

this instruction was not sufficient; the students needed more than just the bare essentials of helicopter flying. As a result, the Army established the Army Helicopter Advanced Tactical Training Course at Ft. Sill on 1 November 1948. The rotary wing program was well on its way and expanded rapidly. Accordingly, this new trend would mean a need for more helicopter pilots. Unfortunately, the Army had exhausted its immediate supply of available commissioned officers for pilot duty.

The term "flight officer" fell by the wayside, but a new term emerged in its place—"warrant officer pilot." It appeared that you could kill the term—but not the concept. As a result, a separate field designed for aviation mechanics and aircraft maintenance specialists was considered. This would lead to a warrant officer rating as the top grade and would give a comparative career progression from enlisted aviation specialties similar to that of the existing warrant officers; but, these new warrant officers would be aviation warrant officers.

The Air Force said it was willing to teach anyone the Army sent to fly helicopters as long as they were officers already qualified as fixed wing pilots. The Air Force further stated that teaching enlisted students to fly was against its new policy. But, the Army considered warrant officer candidates as future officers and therefore the bulk of the helicopter pilot corps. The Army reasoned that a warrant officer was almost by definition a highly skilled specialist. The Army's present corps of nonaviation warrant officers were considered skilled technicians and administrators. So why not have aviation warrant officers as skilled specialists with all of the commissioned officer privileges and pay the same as nonaviation warrant officers?

The aviation warrant officer would be more of a specialist than a technician. However, the operation of an aircraft was considered a technical function and therefore met the criteria for a warrant officer. The aviation warrant officer would spend his entire military career in this specialty—that of an aviator in aviation. This would ensure aviator stability and expertise that sometimes was diminished or lost due to commissioned officer rotation in and out of aviation assignments.

The Army felt that it would benefit in many ways with the aviation warrant officer program: first, the aviation warrant officer could become the capstone of the enlisted aviation career; second, the lack of enough commissioned officers to fill pilot positions could be augmented by aviation warrant officers; third, aviation warrant officers could carry a large portion of the commissioned officers' burdens, thus allowing them more freedom and a broader coverage of command; fourth, it would cost less to pay warrant officers than it would commissioned officers (base pay and flight pay); thus many commissioned officer positions from second lieutenant to major could be converted to warrant officer positions. The Army envisioned aviation warrant officers staying in aviation throughout their careers. This would give aviation the stability it requires. Effectiveness of aviation is dependent upon aviator proficiency and also dependent upon its tactical employment.

The Air Force claimed a training program similar to that which trained aviation cadets during World War II would be a total failure. Fortunately, the Army didn't agree. The Army felt the way to establish such a corps of professional helicopter pilots was to solicit enlisted soldiers to go through flight school, such as the aviation cadet program did. Upon graduation they would become both aviators and warrant officers—aviation warrant officers at that.

The flight officers of the Army Air Corps era drew warrant officer junior grade pay, but they were not considered warrant officers in the true sense. Warrant officers were stereotyped at that time, and possibly to some extent today, as those old, crusty individuals who obtained their warrant after many long years of service in their particular enlisted field. On the other hand flight officers were solicited as either young enlisted men from a wide variety of specialties or as civilians from all walks of life. Apparently, the Army didn't want to resurrect the buried title of flight officer even though the concept was the same. Consequently, the Army decided to call its flight school entries "candidates" instead of "cadets." Candidates would graduate as aviation warrant officers. As you can see, although the titles had changed, the concept remained the same.

In 1949 a proposal was made for a new type warrant officer—the helicopter pilot. The proposal was approved and the transportation helicopter table of organization and equipment (TOE), TOE 55-57T, came out with positions for warrant officer helicopter pilots. Unfortunately, the then existing career fields did not provide for the integration of helicopter pilots.

Meanwhile, the Adjutant General felt that inclusion of the helicopter pilot into the Army aircraft maintenance career field was inappropriate. The reasoning was that there was no apparent relationship between aircraft maintenance (a technical trade) and the qualification necessary to pilot helicopters (a specialty). Technical knowledge in mechanics was not considered a prerequisite for helicopter pilots. The Adjutant General viewed the position of helicopter pilot as being somewhat analogous to that of the unit administrator.

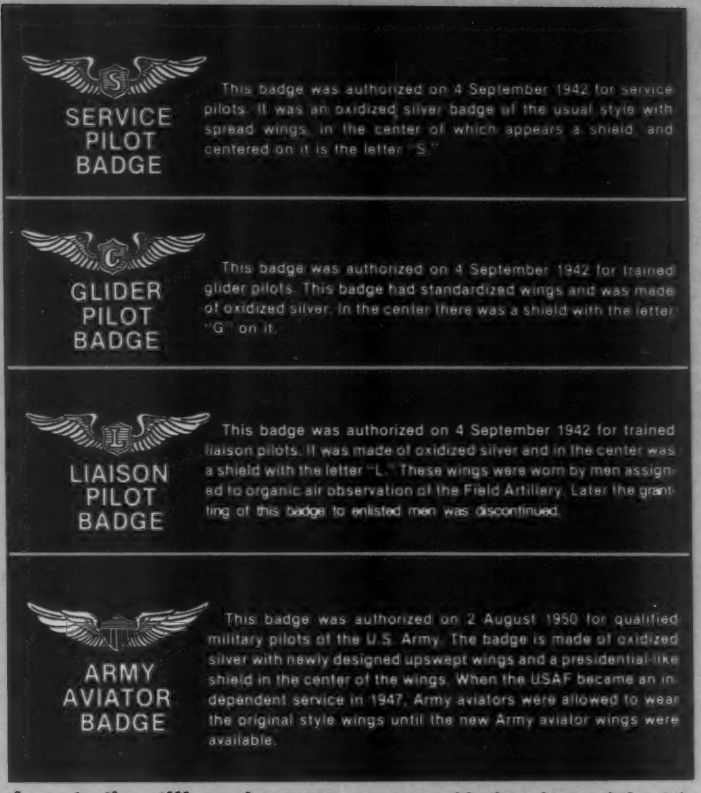
The unit administrator was a warrant officer who performed the duties somewhat similar to that of the executive officer today. Furthermore, the unit administrator did not appear in any enlisted career field. The Adjutant General went on to say that, on an interim basis, the responsibility for monitoring the career management of helicopter pilots would go to the U.S. Army Transportation Corps. Moreover, action should be initiated at the earliest practicable date to establish the aviation warrant officer military occupational specialty (MOS). The aviation warrant officer MOS should be one that any enlisted soldier with proper qualifications could apply for.

The first warrant officer candidate class to train in helicopters was the Army Helicopter Pilot Course, Class 51A. The class started training in April 1951 with 28 students and was graduated in December 1951 with 25 students. Out of the three candidates that didn't graduate, one was eliminated due to a physical disability and the other two voluntarily requested release from the program. The reason for the low attrition rate was attributed by the Army to the stiff requirements for acceptance into the program.

When the students initially began training, they were under the impression that after 12 months in grade as warrant officers they would receive commissions. Unfortunately, after 39 months in grade none of them received, or was offered, a commission. They all were still warrant officers (W1). In fact, it wasn't until February 1955 that warrant officers started being promoted comparable to commissioned officers. Flight pay was another inadequacy, and it wasn't until 1981 that aviation warrant officers drew flight pay equal to commissioned officers.

The first helicopter class trained more or less as a company and in fact formed the 6th Transportation Company (Helicopter) which departed for Korea on 7 December 1952. This, I might add, was the first Army helicopter company in combat. The pilots flew H-19 Chickasaw helicopters.

From the beginning, aviation warrant officers played an important role in both the Korean War and Army Aviation. They played a major role in evacuating the wounded, directing air and artillery strikes, and transporting troops and supplies throughout the battle area. There were other missions that perhaps many prefer to forget. These missions included locating lost units and finding safe routes for the withdrawing forces as the enemy swept


SERVICE PILOT BADGE
This badge was authorized on 4 September 1942 for service pilots. It was an oxidized silver badge of the usual style with spread wings, in the center of which appears a shield, and centered on it is the letter "S."
GLIDER PILOT BADGE
This badge was authorized on 4 September 1942 for trained glider pilots. This badge had standardized wings and was made of oxidized silver. In the center there was a shield with the letter "G" on it.
LIAISON PILOT BADGE
This badge was authorized on 4 September 1942 for trained liaison pilots. It was made of oxidized silver and in the center was a shield with the letter "L." These wings were worn by men assigned to organic air observation of the Field Artillery. Later the granting of this badge to enlisted men was discontinued.
ARMY AVIATOR BADGE
This badge was authorized on 2 August 1950 for qualified military pilots of the U.S. Army. The badge is made of oxidized silver with newly designed upswept wings and a presidential-like shield in the center of the wings. When the USAF became an independent service in 1947, Army aviators were allowed to wear the original style wings until the new Army aviator wings were available.

south through Korea. The aviation warrant officers, although few in number, had the opportunity along with their commissioned counterparts to prove their worth in Army Aviation. Aviation warrant officers performed above and beyond what many conceived a warrant aviator could be.

A year after the Korean War was over the Army Aviation School moved from Ft. Sill to Camp Rucker, AL (later designated Ft. Rucker). The rotary wing course was a section of the flight department. However, with the increased emphasis on helicopter training it was elevated to a department of its own. Accordingly, the Army Cargo Helicopter Pilot Course, 55E, was redesignated 55F. As a result, the first helicopter class at Ft. Rucker, 55F, began training in October 1954 with 6 commissioned officers, 2 warrant officers and 17 warrant officer candidates. The class was graduated in April 1955.

The Department of Defense directed the Army to assume all aviation training in 1956. Wolters Air Force Base, later renamed Ft. Wolters, was transferred to the Army later that year. Ft. Wolters was designated as the Army's Primary Helicopter School. The first class of warrant officer candidates trained at Ft. Wolters was 57-6, Army Aviation Transport Pilot Course (rotary wing). This helicopter class got underway on 26 November 1956 and graduated 27 April 1957.

The Army determined aviation warrant officers to be an integral part of Army Aviation and the training of warrant officer candidates to be an important part of the overall Army Aviation effort. Little did anybody know that aviation warrant officers would have the opportunity to once again maximize their talents and capitalize on their capabilities as professional Army aviators in Vietnam, the air war. The Vietnam War required a rapid buildup of aviators. The warrant officer strength swelled from about 3,000 in 1966 to more than 12,000 in 1970.

Warrant officer aviators flew through some of the heaviest flack in the history of the Indochinese war. There were times when aviation warrant officers encountered unexpected heavy North Vietnamese ground fire that resulted in heavy losses. Despite the losses, Army Aviation warrant officers were deeply involved in every aspect of the war. Helicopter pilots became the indelible symbol of the war; they were among the first to be killed in the war and were among the last to leave. The helicopter mobility and firepower added a radically new dimension to warfare and the daring warrant officer pilots earned their share of honors—Medals of Honor, Silver Stars, Distinguished Flying Crosses, Air Medals and Purple Hearts.

In addition to flying, many warrant officer aviators showed that they were fully capable of performing as aviation section leaders, platoon leaders, operations officers and liaison officers; positions that require the rank of company grade commissioned officer aviators.

Warrant officer aviators have come a long way since the earlier concepts. The stepping stones from enlisted pilots to aviation warrant officers stemmed from a need for pilots during a crucial period in Army history. Although there were other reasons, the need for the pilots was the dominant one. Aviation warrant officers have proven themselves to be a worthwhile investment to the Department of the Army and especially to Army Aviation.

There are some 14,000 warrant officers serving in the Army today and about 5,000 of these are aviators. In fact, the Army's aviation combat arms force structure consists of more than 50 percent aviation warrant officers. Although aviation warrant officers represent a large number in both the warrant officer corps and in aviation they don't appear to receive an equal amount of attention in their role. It seems the Army still doesn't have a clear grasp of what to expect of the aviation warrant officers; they need to be further defined and recognized for the capabilities they have and will develop.

Aviation warrant officers represent the technical expertise of Army Aviation today. They are the large majority of the instructor pilots and the standardization instructor pilots. They are responsible for training in all areas to include tactics. Unfortunately, aviation warrant officers are not schooled in tactics, doctrine and leadership the way commissioned officers are in officer basic courses. Yet, aviation warrant officers are not expected to abort a mission when their commissioned aviator counterparts are not in a position to complete the mission. The aviation warrant officers are expected to successfully complete the mission as planned. In other words, the Army must take a closer look at how, when, where and why it trains its aviation warrant officers the way it does. Perhaps the Army needs to revise its training methods to meet the challenges of the 1990s.

Yes, AWOs have come a long way—but as you can see, they still have "some" to go.

U.S. Army Communications Command
ATC ACTION LINE

Tower En Route Control

Sergeant First Class Don A. Roberts
U.S. Army Air Traffic Control Activity
Aeronautical Services Office
Cameron Station, Alexandria, VA

TOWER EN ROUTE CONTROL (TEC) has been offered as a service to aviation for many years. Within the National Airspace System it is possible to fly IFR without leaving approach control airspace. In the fall of 1981, action was initiated by the FAA to expand this service. TEC is primarily designated for nonturbojet aircraft requesting IFR clearances for flights of 2 hours duration or less. Normally, the TEC clearance uses altitudes at or below 10,000 feet.

Basically, TEC service works with connecting radar approach control airspace and may provide the aviator a viable alternative option to filing IFR routings with the FAA Air Route Traffic Control Centers. By taking advantage of TEC service, an aviator can normally obtain a more direct IFR route using radar vectors and NAVAIDs available on the route of flight.

There are some constraining factors the FAA must consider when applying TEC procedures:

- Airspace configurations for facilities involved (preferred routes, etc.).
- Special use airspace requirements.
- Heavily traveled VFR routes.
- Associated traffic workload resulting from increased use of cardinal altitudes.
- Staffing capability of facilities involved.

Although TEC was originally adopted to provide IFR service to "overflow" aircraft from ARTCCs, a recent review of airspace and procedures by the FAA prompted an expansion of the TEC service. Specific information may be found in the appropriate airport/facility directory, which includes a section on regional tower en route control routes. FAA flight service stations are an additional source for the TEC routings. There are no unique requirements upon pilots to use TEC. Normal flight plan filing procedures will ensure proper flight plan processing. When filing IFR flight plans using this service, the abbreviation "TEC" should be included in the "Remarks" section of the DD 175. This procedure will alert FAA ATC personnel and provide more efficient handling of the IFR clearance. Pilots who use the TEC system should remember that they are subject to the same delay factor at the destination airport as any other aircraft in the ATC system. In addition, departure and en route delays may occur depending on individual facility workload. When a major metropolitan airport is incurring significant delays, pilots in the TEC program may want to consider an alternate airport which is experiencing little or no delay.

The FAA expansion of TEC enhances ATC service in the low altitude structure of the National Airspace System. When authorized, use of TEC can be an operational benefit to Army Aviation as well as to the Air Traffic Control System.

Readers are encouraged to address matters concerning air traffic control to:
Director, USAATCA Aeronautical Services Office, Cameron Station, Alexandria, VA 22314

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In order for you to have a nice day you must plan your flight and be aware of and sensitive to environmental changes. You must:

- **Know flight procedures**
- **Know climatic conditions**
- **Know aircraft limitations**
- **Know your limitations**

The following articles should be helpful if you fly the OH-58. They can be obtained by writing to Editor, *U.S. Army Aviation Digest*, P.O. Drawer P, Ft. Rucker, AL 36362, or by calling AUTOVON 558-6680 or Commercial (205) 255-6680. Read them, they could save your life.

"How To Crash By The Book," September 1977

"OH-58 Tail Rotor Stall," November 1978

"Tail Rotor Breakaway," June 1980

"OH-58 Power Droop," December 1982

"OH-58 Tail Rotor Control Power," March 1983